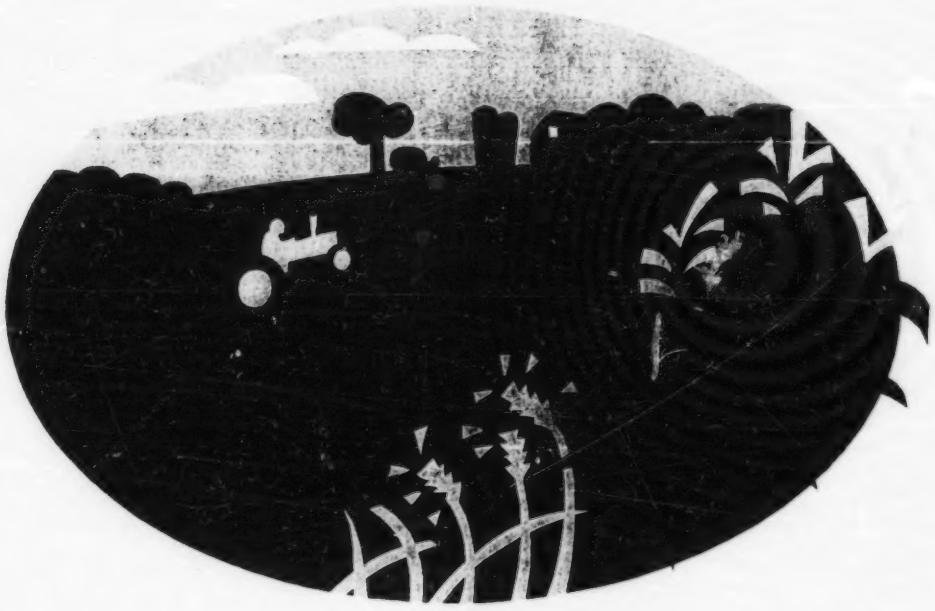
Manitoba
Agriculture
and Food

AGRICULTURAL

OUTLOOK

2001

GRAINS, OILSEEDS, SPECIAL CROPS



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CROPS SUMMARY, 2000/01 AND 2001/02

2000/01 Review:

- Although grain and oilseed prices are still at very low levels, relative to costs, prices bottomed during 1999/2000, and have risen in 2000/01, many up to 10% from previous-year levels.
- In 2000/01, the world will consume nearly 50 million tonnes more grain and oilseeds than it has produced. Outside the US, the shortfall between production and consumption is more than 130 million tonnes (42 million wheat, 83 million coarse grains, 8 million rice)!
- Two years of prolonged drought conditions eased by late-2000 in Near-East Asia, in North Africa, China, and Australia, but not early enough for many of the 2000/01 crops in the affected regions.
- Western Canada lost at least one million acres of potential production in each of the past two years. In 1999/00, Manitoba was unable to plant about 1 million acres of cropland because of wet conditions, and in 2000/01, Alberta lost a similar amount, mainly in the south to drought.
- All western Canadian provinces suffered losses in yield and quality from late plantings, late harvestings, disease, and other pests. The growing season humidity fostered an unusually heavy fusarium outbreak in Manitoba and parts of eastern and southern Saskatchewan. Widespread harvest-time rains resulted in considerable sprouting across much of the northern prairies, from the northern US north and west into Manitoba and across into northern Alberta, and there was considerable loss of grade.
- The prices of soybeans, feed peas, and other feedstuff strengthened in late 2000 on the expectation of increased European demand for livestock protein feeds as a substitute for beef bonemeal and meatmeal. Markets are expecting 2-2.5 million tonnes of European demand will be diverted, mainly to alternate protein sources, including soymeal, other oilseeds and pulse crops.
- The EU has banned beef bone and meat meal in all livestock rations, beginning in the second half of 2001. Most EU livestock producers began shifting early. EU meat demand has dropped sharply, even for forage and grain-fed animals, however. The EU also decided to test or destroy all cattle older than 30 months by July 1, 2001. Up to two million EU cattle may be destroyed, including large numbers of non-BSE cattle. Britain's experience since its major BSE outbreak in 1986 suggests that, once safeguards are in place and consumer confidence is restored, EU beef consumption will recover.
- The Estey review of the Canadian transportation system was released at the end of December 1998; followed by the Kroeger recommendations in September 1999. The federal government implemented legislative changes for the start of 2000/01, including a revenue cap on the railways (rather than a rate cap), and a requirement for the CWB to begin tendering for a increasing portion of its supplies.
- US and European agriculture supports continue to depress market prices and encourage the production of softer and lower-input-cost wheat, the US through its Loan Deficiency and transition and the EU by reducing and equalizing supports for most cereals and oilseeds.
- Export supports are lower in the US and the EU in early-2000/01. The US has been using concessional credit and aid in recent years (on about 4 million tonnes of wheat exports in 1999, less in 2000/01 because of reduced aid requirements by Russia), rather than Export Enhancement Subsidies. EU export rebates or subsidies compensate for the difference between high internal EU prices and low external or world levels. International prices have

risen and, with the weak Euro and tight domestic supplies, the EU Commission has disallowed most export subsidies and discouraged higher-quality grain exports.

- China continues to grow in importance as an economic and currency cornerstone in Asia, an importer of wheat, barley, canola, soybeans, and a large exporter of corn. China's crops were sharply reduced by drought in 1999 and 2000, and carryover supplies could be halved by crop yearend. Also in 1999 and 2000, bilateral agreements with China's major trading partners cleared the way for China's entry into the WTO in early 2001.
- The 2000/01crop year is the last of tariff cuts for developed countries under the World Trade Organization.
- In late 2000, the Mercosur countries of S. America (Argentina, Brazil, Paraguay, Uruguay and associate members, Bolivia and Chile) signed an agreement committing each member to economic improvement targets involving both fiscal and monetary policy. They have agreed to target lower annual inflation rates (no more than 5% between 2002 and 2005, 4% in 2006, 3% thereafter), limit public debt and fiscal deficits. Latin American countries are expected to be one of the larger economic and agri-food import growth markets in the future.
- Manitoba's snowmelt and spring run-off in 2000 was unusually low across Manitoba due to light snow-cover the previous winter. Summer rains increased stream flow and replenished most reservoirs. Manitoba's southeast, the Red River Valley, has had more than a year of excess soil moisture, added to by US run-off, and remained saturated well into the late fall, early winter of 2000/01.

2001/02 Highlights:

- Gradual economic improvements are expected for much of Asia (2%+), which should encourage increased consumption rates. Forecasts for growth in Canada and the US suggest about 3% or less, which is a major slowing for the US in 2001.
- Meteorologists are expecting neither a strong El Niño nor La Niña effect into the 2001 growing season. For North America, the expectation is for more "normal" weather, but even less predictable regional weather patterns. Moisture-deficit areas in the US shrank during 2000, and are now concentrated mostly in southeastern areas (Florida, Georgia). Heavy fall rains recharged moisture throughout much of the US. Excess moisture is likely to persist into spring, 2001, in the areas south and west of the Great Lakes and into Manitoba's eastern Red River Valley.
- In already dry areas of southern and southeastern Asia meteorologists are predicting an El Niño effect in early-2001 that suggests drought and reduced agricultural output. If low monsoons and drought occurs, oilseed markets may react to some reductions in palm oil output, which is currently in very large supply.
- In both Canada and the US, producers are expected to plant more of the lower input-cost cereal grains, which will likely result in increased spring and Durum wheats, and coarse grain plantings, particularly barley and oats. US farmers are expected to harvest another record crop of soybeans in 2001. Markets and program support rates still favour soybeans, suggesting some shift between corn and soybean plantings. Some shifts to soybeans and other pulse crops may also occur because of lower requirements for high-priced nitrogen fertilizer.
- Assuming more normal crop conditions, Canadian crops should be much larger in 2001 than in 2000. Alberta alone should have recovered approximately one million acres of plantings. Cereal grain plantings and yields are expected to improve, along with improved dry bean and corn production, particularly in Ontario. Plantings of canola are generally expected to decline.

- Global oilseed demand continues strong, and rally potential exists. However, US soybean and EU canola/rapeseed and flaxseed crops are expected to be larger.
- After the problem-inspired price improvements of 2000/01, price prospects in 2001/02 are fairly flat. Global supply cushions are still large, but only in exporting countries. Rally potential will come mainly from the renewed threat of severe crop problems. Mid-grade price improvements are expected to be 5-10% in most major crops, but with reduced spreads or premiums on the highest grades and Durum, providing little or no improvement from current low price levels. Special crop prices are likely to be fairly flat and production maintained.
- Economic factors: high prices for crude oil, fuel, and ocean freight, and a rising Canadian dollar exchange (forecast by the major Canadian banks at 1.45 to the US dollar for the year 2001) could temper international demand and prices.
- The 1996 US Farm Bill is intended to be replaced or updated before the 2003/04 crop year; so it should be in place by fall, 2002, in time for winter wheat planting.
- A growing world population would suggest average consumption increases of 20 million tonnes or more of grains and oilseeds per year over the next decade or two.

WHEAT

World wheat supplies in 2000/01 are 21 million tonnes or 3% smaller than in 1999/2000. Global production is estimated at about 578.8 million tonnes, down more than 9 million from the 588 million tonne crops of the previous 2 years, according to the USDA's January 2001 estimates. Global wheat trade has shown little growth over the past decade and, with larger crops in many importing countries, trade in 2000/01 could drop about 6 million tonnes from '99/00 to nearly 127 million (including intra-EU movement). Nearly 1/3 of the shipments will be to five countries, Algeria, Brazil, Egypt, Iran, and Japan. Traditional exporting countries continue to have large crops and will have nearly 45% of the carryover supplies. The world has been consuming 593-596 million tonnes over the past 2 years, about 16-17 million than what was produced this crop year. Global carryover is forecast at 109.9 million tonnes, a drop of 14% from '99/00! That represents 18% of use or roughly 67¼ days of supply.

The production losses were in importing countries, with a decline of close to 13 million, mostly in China. China has been hit by a succession of major disasters in recent years, including flood and drought, but in 2000/01 the wheat crop was a low 102 million tonnes (113.9 in '99/00, 110 in '98/99). China consumes an estimated 114-117 million tonnes of wheat. China's wheat stockpile is expected to be halved (reducing it to 14.2 million from 25.2), keeping imports to only 1.5 million tonnes (1 million in '99/00). China may need several million tonnes of wheat imports in 2001/02, therefore, even if its wheat crop recovers to the 110 tonne or better level. Both Pakistan and India had record crops in 2000/01, have low import requirements, and may become net exporters. India is hoping to export at least 2 million tonnes of wheat in 2000/01, has a crop of about 75.6 million (70.8 in '99/00), but burdensome and growing government stockpiles of 15.6-16.6 million. Russia's crop is larger at 34.4 million tonnes (31 in '99/00, 27 in '98), so a repeat of '99/00's large US aid shipments may not be necessary.

Major exporters produced about 1 million tonnes more wheat in 2000/01. Weather downgrading at or prior to harvest has resulted in high feed wheat supplies again in 2000/01 in the major exporting countries, including Canada, the US, the EU, and Australia, and a necessity to increase feed use. Feed consumption in exporting countries is expected to be up 5.5-6 million to a total of about 66.7 million tonnes. Australia's newly-harvested wheat crop was reduced by drought, locusts, and then pre-harvest flooding, to approximately 19.5 million tonnes (versus a record 25 million in '99/00); reports have suggested that Australia may be buying US wheat to meet some of its sales commitments. Argentina's new crop is up one million to 16.5 million tonnes (15.5 in '99/00, 12.4 in '98/99); Argentina feeds little wheat, so the increase is exportable surplus after meeting Brazil's import demand of less than 8 million. The EU-15 crop was a record at about 104.8 million (97.1 in '99/00), much of it softer wheats, downgraded, and ineligible for intervention programs, but suitable for partial replacement of meat and bonemeal in livestock rations. The USDA is projecting a 4.1 million tonne increase in EU feed wheat use (to 51.2 million) and an EU carryover of about 14.3 million, little change from the previous year (coarse grain feeding up 3 million, and EU soy crush up 0.9 million).

US wheat supplies were down only 2% in 2000/01, because of the 25.85 million tonne carry-in. The US wheat crop was down 3% to 60.5 million tonnes (62.6 in '99/00, 69.3 in '98/99). The production loss was in the Hard Winter varieties (a drop of 20%), while soft reds were up 4%, Hard Red Spring up 11%, and Durum up 11%. US exports have been somewhat disappointing, and lagging predictions, but the USDA is expecting the export pace to increase into spring as other exporters' supplies of high-quality wheat dwindles. Total US wheat exports are expected to

reach over 30.5 million tonnes, a level not reached since 1995/96. US domestic use has been strong, December stocks were lower than expected, and June 30th carryover wheat stocks are forecast to be down 3.7 million to 22.16 million (25.85 the previous year).

Canada's wheat supplies total about 34.2 million tonnes in 2000/01 (34.3 in '99/00, 30.2 in '98/99) The wheat harvest was about 26.8 million tonnes (similar to '99/00). Despite fieldwork delays at planting and harvesting time, 7% more land was planted to wheat. Yields were lower, averaging 36.4 bushels/acre (38.5 in '99) across Canada. Manitoba's wheat crop reached 4.27 million tonnes, a 35% improvement over 1999's flood-reduced plantings. Protein levels were high, but much of Canada's wheat crop was downgraded by weather. There was drought in southern Alberta, and drier conditions into southwestern and central Saskatchewan. In Manitoba and Ontario, there was a tendency for excess moisture and humidity from planting through to harvest, with resulting fungal problems contributing to further downgrading. There was harvest-time downgrading, particularly sprouting, as grain sat in swaths in the rain. Most of Manitoba, limited areas in southern and southeastern Saskatchewan, and much of Ontario were hit by high levels of the fusarium fungus. About 65-70%% of Manitoba's wheat and barley crops were affected to some degree by fusarium. Manitoba's protein levels were extremely high, at an average 14.2% in the Canadian Grain Commission (CGC) fall survey, so grades on delivery have been disappointing. Within Canada, top-quality supplies are still fairly tight because of low carryover from previous years, but demand is strong from the off-Board market.

Canadian wheat exports were rapid early 2000/01. The Canadian Wheat Board has indicated that its export program will be slowing in the latter part of the crop year, so it appears that crop year exports could be close to the 18.1 million of '99/00. Much of the downgraded wheat will be fed to livestock, which should help take carryovers well below the 7.37 million of '99/00.

Price:

Wheat prices in 2000/01 rebounded nearly 10% from year-ago lows. The CWB's posted asking price for #1CWRS, 13.5% protein, in early January 2001 was around $240/tonne, up 12% from $215 a year ago ($250-260 two years ago). In January, Chicago's March futures level was around US$2.84/bushel, up 14% from US$2.50 a year-ago ($2.80-2.90 January '99).

Pool returns appear to be up about 9% from '99/00. The Canadian Wheat Board's December pool return estimate or "PRO" to the producer for 2000/01 pool No.1CWRS 13.5% was $210.00/tonne ($192.43 for '99/00) basis port. No.3CWRS is forecast at $173/tonne ($152.75 in '99/00), with Canada Feed at $135/tonne ($123.43), No.1 Red Prairie Spring at $169 ($150.16), No.1 Extra Strong at $180 ($162.17), and No.1CW Red Winter at $168 ($151.91).

The European Union has been reluctant to use export rebates or subsidies on wheat this crop year, and the volume of awards has been small in early-2000. In late-December 2000, the EU granted a subsidy of 5 Euros/tonne on 213, 000 tonnes of wheat, the first on wheat since summer. (A year ago, award levels were about US$40-60/tonne for wheat and barley.) By restricting exports, the EU had been attempting to restrain domestic prices, which have tended to be at a premium to the comparable US Soft Red. (1 Euro = C$1.44; C$1=0.7 Euros)

The US continues to make extensive use of concessional credit and aid, although resisting calls to use funds that have been budgeted for the Export Enhancement Program. To mid-November, US producers had collected an average of US$0.44/bushel on about 70% of the 2000-crop to compensate for the difference between the low market price at harvest time and the loan rate. US farmers will also be getting additional disaster payments to compensate for quality losses in 2000, with signup in early 2001. The 2000/01 US loan rate is US$2.58/bushel. The USDA puts

the average return to the US farmer at approximately US$2.60/bushel (US$2.48 in '99/00, US$2.65/bushel in '98/99) for all wheat, including Durum, excluding government payments.

Outlook:

Global wheat supplies will likely tighten further in 2001/02, since carryover is low and global wheat production may be little changed in 2001/02. There appears to be little hope that increased spring wheat plantings or current winter wheat conditions will provide sufficient offset to the 17.5 million tonne drop in carry-in. Weather patterns, so far, suggest no widespread disasters for 2001/02, but rather a continuation of more localized problems, and a return to more normal cropping seasons. Instead, it appears that global carryovers will tighten further in 2001/02, potentially dropping another 14-19 million tonnes to 90-95 million tonnes.

Global consumption should continue to increase with improved economies, and increased population and livestock. World population projections suggest that an additional 7 million tonnes/year of wheat are required just to maintain consumption levels. Current consumption increases do not appear to be keeping pace with population, but current levels might not have been possible without both large surpluses and low prices!

China's wheat supply situation is the most precarious of the major producers. Fall plantings in China are uncertain, but may have been at fairly high levels as moisture levels and crop prospects improved. If production does not improve drastically, a further year of shortfall would leave little or no surpluses and could necessitate larger imports.

US and EU farm programs ensure that large supplies of softer and feed quality wheats will continue to overhang the market, to feed the world and its livestock, and to comprise much of the global carryovers. US wheat production for 2001/02 may yet be very similar to 2000's 60.5 million tonnes. US wheat supplies for 2001/02 are likely to be down about 5% mainly because of the lower carry-in. The US wheat carry-in (22.2 million tonnes) will be down 14% from the start of the year (still more than 90% of the 2000 Canadian crop). The decline is expected to be in the higher-quality hard wheats -- Hard Red Winter and Durum (each down 22%) -- but there are increases expected for Hard Red Spring (6%), Soft Red (2%), and White wheats (8%). US fall plantings were prolonged first by dry, then by wet weather, and continue into February in some southern areas. The USDA January report estimates a drop of down 5% or 2 million acres in US winter wheat plantings. A more "normal" 7-8 million acre loss between seeding and harvesting (9.5 in 2000/01) could compensate for the reduction in seeded area. Yields are uncertain because of the slow germination and extreme cold, but much of the crop finally received improved precipitation. Winter Wheat plantings account for about 70% of the total US wheat crop. Spring plantings are expected to increase. (US total wheat area for 2000/01 was 62.5 million acres planted, 53 million harvested.)

The heavy fall storms, flooding, and cold weather in much of coastal and near-coastal Europe resulted in some losses in fall plantings, and some spring reseeding will be required. EU farm supports encourage the planting of lower-input-cost feed wheat varieties, and farmers continue to plant for the program. EU set-asides will remain at 10% for 2001/02 (as in 2000/01 and '99/2000, 5% the previous few years). So far, snowcover is likely to have prevented increased winterkill risk in Russia, where wheat accounts for about half of all winter grains.

Canada's farmers planted 6% more winter wheat last fall (1.12 million acres for harvest this spring/summer, 1.06 million acres for '00/99). Manitoba farmers increased fall plantings by 54% to 200,000 acres (130,000 acres for 2000, 90,000 for '99 harvest).

Winnipeg's Agriculture Canada research station and Monsanto had expected to have the

first Roundup Ready hard red spring varieties by about the year 2002; adoption will likely be delayed until the new varieties are accepted by major export markets.

Additional wheat price volatility is likely in 2001/02. Wheat prices will continue to be weighted down by the large supplies of US corn, softer and down-graded wheat, and on average are expected to show an improvement over '2000/01 of about 5-10%, still on an upswing from the '99/2000 bottoms. Chicago's December 2000 contract was already about 9% or about US$0.46/bushel (US$17/T) higher than the March 2000 contract during early January.

Durum:

Canada's Durum supplies in 2000/01 are up nearly one million tonnes from the 6.26 million of '99/00. Production increased 31% to 5.65 million tonnes (4.3 million in 1999, still below the 6.04 million of 1998), most of it high quality, and most of it grown in Saskatchewan. Durum exports reached only 3.5 million tonnes in '99/00 because of the low supply, and despite the improved supply, early-season exports to December were close to year-ago levels. Manitoba's Durum production quadrupled to 141,500 tonnes (35,400). The CGC harvest survey puts Manitoba's fusarium infection at 77.1% of the crop, and much of the provincial crop will likely be fed, despite higher protein levels.

US Durum production was up 11% in 2000 to 3.0 million tonnes (2.703 in 1999, 3.76 in '98), added to by 1.4 million tonnes of carry-in. High plantings were attributed to a high level of US crop insurance in 1999, and to price premiums in 2000. California had increased irrigated fall plantings of "Desert Durum" to nearly 98,000 acres, a 10% increase, with another 72,000 acres in Arizona. While the carryover is equivalent to about half a crop, much of it, this year and last, may not be high quality. Much of the US Durum plantings are in N. Dakota, where there have been severe problems with fusarium on early-crop, and sprouting on late-crop the past two years. Protein content was good this year in N.Dakota, with 58% of the crop in the higher grade "Hard Amber Durum", with much of the rest 3-5AD or lower. The average weight of the N.Dakota crop is down a pound to 58.8 pounds/bushel, and the falling number average is down (216 in '00/01, 250 in '99/00, 336 in 5-year average). (Falling number is an estimate of the number of seconds dough will rise before falling, an indication of baking quality.) Severe quality discounts were resulting in less than US$0.80/bushel at the elevator on some deliveries. US Durum growers are seeking disaster payments for 2001, and a crop insurance plan that would pay on quality/price loss even when yields are high.

Whether or not much of the US supply is suitable for milling appears to be the subject of some debate. US Durum users (Cenex Harvest State) estimate a 2000/01 US production shortfall of milling quality Durum of up to 762,000 tonnes (28 million bushels). About 460,000 tonnes (17 million bushels) may be needed from Canada, the rest from US carryover stocks. North Dakota millers, like Minot Milling (Philadelphia Macaroni) with a 183,000 tonne/year (6.7 million bushel) capacity, are apparently sourcing Durum from up to 300 miles away. The N. Dakota Pasta Co. of Carrington is now the third largest US pasta manufacturer, has members in Montana, Minnesota, and N. Dakota, but is short on supplies. N. Dakota Pasta has a milling capacity of 354,000 tonnes (13 million bushels) of Durum, but was reportedly limited to 80% of capacity in 1999, producing 182,000 tonnes or 400 million pounds of pasta.

Price:

High-quality Durum has again rebounded to a premium compared to higher-protein Red Spring wheat, in both the export asking price at port and at the farm level. Two years of drought

reduced Durum crops in Near-East Asia and N. Africa, which contributed to rising prices. US milling demand pushed prices to the US farmer to about US$158/tonne (US$4.30/bushel) for milling quality, although prices eased before the Christmas market break. The CWB asking price at port was $292.73/tonne in early January 2001 (12% above $262.31 in January 2000). The CWB pool return or "PRO" to the farmer is forecast at a 9% improvement at $245/tonne for No.1CWAD 13% protein ($225.26 in the '99/00 pool). There are smaller improvements in the lower grades, with $190/tonne for No.3CWAD (up 4% from $182.86 in the '99/00 pool), and $154/tonne for No. 4CWAD ($154.79).

Outlook:

The 2-year drought ended in North Africa in late-2000, aside from some areas in Iran and Syria. Still, current crop conditions can deteriorate quickly if hot, dry winds desiccate the region's growing crops around March, and that could affect export prices in the spring and at harvest. Much of the international Durum market's demand strength develops if and when North Africa's producers have poor crops.

US Durum milling requirements may be the driving factor in Durum prices in 2001/02. North American Durum plantings are likely to increase in 2001/02 in response to this year's high demand and price premiums. With the crop problems of the past 2 crops, much of the US carryover may be of questionable quality, but its size will continue to overhang the market and keep prices under pressure. Good-quality supplies will remain tight, and will require exceptionally good crop conditions through to harvest.

North Dakota and Saskatchewan are the major N. American areas for Durum. Plantings in Manitoba and N.Dakota will be likely be dependent on obtaining sufficient fusarium-free seed supplies, and on the outlook for fusarium in the spring (soil moisture and weather predictions), given the high potential of residual or overwintering infections. The Red River Valley regions of both Manitoba and N.Dakota had areas of excess moisture and heavy streamflows in the late fall, early winter. If the planting or growing seasons are wet, then quality, not quantity, will likely continue as a major issue. Saskatchewan, Montana, and the US southwest have low or no significant fusarium. Desert Durum plantings were expected to be up sharply; however, with the low prices last summer, plantings were reduced and are now estimated at a 14% drop from a year ago. (Durum seeding in California began in October and may continue into March because of double-cropping on winter vegetable land.) High-quality Durum supplies are not likely to be recharged even with larger crops, which should ensure a continuation of the current Durum premium over spring wheat.

COARSE GRAINS

Global coarse grain supplies are down only 2% in 2000/01, but that represents nearly a 22.3 million tonne loss. China alone had a 24.5 million tonne loss. Global production dropped 18 million tonnes to around 858.4 million (876.5 million in '99/00, 890.0 million in '98/99), according to the USDA. World corn production is down nearly 21 million tonnes, barley is up about 4.0 million, and sorghum down about 4 million. China harvested an estimated 114.1 million tonnes of coarse grains (138.6 million in '99/00), with much of the loss being corn. In contrast, US production was up 11.3 million tonnes (274.4 vs 263.17 in '99). Australia's total crop is put at a tentative 9.2 million (8.72 in '99/00), despite drought and flood losses. There were larger crops in the EU (108.7 vs 102.8), Russia (26.0 vs 21.8), southeast Asia (15.16 vs 14.86), and little change in Mexico (25.5-26 million tonnes). There was lower production in Canada (24.35 million in 2000/01 vs 26.77 in '99/00) and in Argentina (19.1 vs 21.16). Eastern Europe and Latin American countries had larger crops, although Brazil's corn crop had weather set-backs.

Still-low income levels in much of the developing countries, and an import-substitution of meat and feed-grade wheat have coarse grain exports down about 2.8 million tonnes from the 103.96 million of '99/00 (96.2 million in '98/99), excluding intra-EU trade. The EU remains both a major importer and exporter, with much of the traffic internal. In '2000/01, the EU is expected to import 15.8 million tonnes of coarse grains, and export 26.1, for a net export of 10.3 million in the marketing year. Corn (and feed wheat) purchases by S. Korea, and barley by Iran and China are still expected to be high. In the US, corn use is increasing due to ethanol and sweeteners. In both Canada and the US, weather was extremely cold through to December, increasing feed usage. In Canada, locational crop problems, including a poor US corn crop, southern Alberta drought, high fusarium and corn countervail in Manitoba have resulted in some feedgrain price strength.

Outlook:

World carryover stocks of all coarse grains by the end of 2000/01 are put 141.6 million tonnes, a drop of 23.7 million from the start of the year. There will be some offset from a substantial carryover of feed-grade wheat, however. China is expected to drop its coarse grain carryover by 36% or 19 million tonnes, to 34.61 million. The US carryover is expected to be at least 1.7 million tonnes larger, which is likely to maintain pressure on US markets, despite the reductions in surpluses elsewhere.

Production increases are expected in most of the cereal and feed grains in 2001/02, mainly because of better yields, particularly in China, but also in barley and oats elsewhere. Improved weather prospects in 2001 point to higher corn yields in both the US and Canada. As a result, coarse grain prices are likely to continue low, with at best about a 5% improvement in 2001/02.

CORN

World corn production is down about 20.7 million tonnes in 2000/01 (584.4 million tonnes vs 605.15 million in '99/00), although some of the South American crops have yet to be tallied. Total global consumption of corn is now expected to be up less than 2 million tonnes. Consumption increases are expected in China, Brazil, India and the US, with some decreases

elsewhere. Large supplies and low corn prices over the past few crop years have resulted in a steady increase in corn for feed use. Global trade in corn may be down less than 1 million tonnes to 72.1 million, excluding intra-EU trade, but that is still well above the 63-68 million range prior to '99/00. World corn carryover could drop about 20 million tonnes to about 104.5 million by the end of 2000/01 (125.6 - 99/00, 121.9 - '98/99), mainly due to the declines in China.

Drought cut China's 2000/01 corn production by an estimated 23 million tonnes in 2000/01 (to 105 million vs 128 in '99/00). China's crops had been large since '97/98, and exports in '99/00 were close to 10 million tonnes (compared to 3.3 million the year before, with a previous 6.2 million prior maximum), mainly sold into neighbouring Asian markets. In December, the USDA was assuming China would export 4 million tonnes of corn in 2000/01; China apparently granted subsidies on sales into February, but there were also cancellations, adding to the uncertainty. Potential export competition from China is a major market concern, particularly since China's corn exports require export subsidies. In addition, China appears to be reducing its corn surpluses prior to joining the World Trade Organization in early 2001. China's domestic corn prices have risen, but that results in even higher export subsidies than last year. The USDA is predicting that even with a lower export level, China may have a 34.06 million tonne carryover, a drop of nearly 19 million tonnes (from 52.9 at the start of the year).

The US harvested a 253.2 million tonne crop (239.5 million in '99/00, 247.9 in '98/99). Domestic US demand is at record levels of around 197 million tonnes, with 30 million of that due to industrial use (especially ethanol). US corn exports are expected to reach close to 55.5 million tonnes (49.2 million in '99/00), although slow exports may force the USDA to further revise the export projection downward. Japan and S. Korea temporarily suspended US corn buying in the fall, when protein from a GMO corn that was not approved for food use or exports, "StarLink", was found in both feed and food corn shipments from the US, and then in another variety. The USDA and Aventis were attempting to track and buy up all StarLink not intended for US feed use. It was not until late-2000 that Japan and the USDA agreed on testing procedures for exports that would allow buying to resume. Domestic and export use has been insufficient to draw down US surpluses. In January, the USDA was predicting US corn carryover would increase to 45.9 million tonnes (43.6 million in '99/00).

Delayed planting and a cool, damp summer reduced Canadian grain corn production by 26% to 6.8 million tonnes (compared to 8.1 million in '99/00, and a record 8.9 million in '98/99). Yields were down sharply in eastern Canada.

Manitoba's corn plantings had increased to an estimated 145,000 acres planted, 130,000 harvested (95,000 planted in '99). Crop development was slow because of weather, but yields reached an estimated average of 80 bushels/acre, and the crop totaled about 264,200 tonnes, up 11% from 238,800 in '99 (216,000 in '98, 152,400 in '97). Manitoba has also imported about 114-125,000 tonnes of US corn in recent years; however corn imports slowed to a trickle after November.

Corn markets are becoming increasingly variety conscious. There are two main distinctions for multi-purpose corn grown in the world for human food and livestock feed markets, Dent and Flint. Other specialty corns include Sweet Corn (a vegetable), Waxy corn (used by wet millers), and Popcorn, as well several other specialty types, including coloured and high-oil corns. Flint corn has kernels that are smaller and rounder than Dent varieties, a hard or flinty, starchy endosperm, and a shorter growing period more suited to cooler climates. Dent corn kernels tend to be larger and a bit softer than Flint kernels, are indented on the top part of the kernel because of a shrinkage of starch, and require a longer growing period and more heat-units than Flint. There

are also a number of varieties that have been cross-bred (Dent/Flint) to be intermediate in starch characteristics and growing requirements to suit regional climates; some of these varieties are more Dent-like and others more Flint-like. There are several classes of Dent corn grown in the US, including Yellow Dent (for wet milling into sweeteners, starches, livestock feed, etc.), White Dent (for dry corn milling into corn flour, hominy and grits, and industrial uses) and mixed varieties (livestock feed). A number of types are grown in most corn growing regions of the world. Flint corn is reportedly grown in Argentina and South Africa, as well as the US and Canada. Dent corn is grown in southern areas of the US, and historically was credited with about 99% of all US corn production; some of that, particularly in the northern US, is more likely now to be shorter-season Flint or Dent/Flint crosses.

Much of the corn produced in eastern Canada is classed as Dent, although much of it may be Dent/Flint or "Semi-Dent" crosses. Manitoba grows Flint, Dent, and Semi-Dent varieties. In 2000, Manitoba corn plantings were an estimated 63% Dent, 12% Semi-Dent, and 25% Flint varieties, based on the top 21 Hybrids, and including the 20,000 acres of Canamaize. Canamaize 2000 (designated BRC SYN) is a new open-pollinated, dwarf, flint-type corn variety.

Feed values may be fairly similar in most standard corn varieties, with the perceived differences related mainly to the processing methods employed. The harder Flint corn varieties are well suited to hammer-mill or fine particulate processing, and the Dent corn varieties to large-flake roller mill and steaming processes. The cross-bred Semi-Dent varieties have intermediate characteristics. As a result, feed mills may prefer specific types, varieties, or characteristics of corn, based on their processing equipment, their ability to bin varieties separately, and their customers' preferences. Dairy cattle, for example, may prefer steamed, rolled grains. With the increasing importance of segregation in feed and industrial markets, as well as the focus on GMO's and non-GMO's, there is a rapidly increasing focus on identity-preservation and separate binning in North American, European, and Japanese corn markets, as well as in Manitoba.

Seagram's spirits and wine enterprises, including Manitoba's Gimli Distillery, were sold by Seagram's to Vivendi, and then in December, 2000, to a joint venture between Diageo and Pernod Ricard, subject to regulatory approval. The two companies apparently have an agreement to divide Seagram's brands between them. The Gimli distillery produces whisky, and its annual corn usage capacity has long been rated at approximately 2 million bushels.

In February 1998, US Agriculture Secretary Glickman announced what appears to be a major discovery for corn, a naturally-occurring, mutant corn gene that halves the phosphorous (P) in monogastric (hog and chicken) manure. The USDA expects the mutant will reduce livestock supplement costs (P-rich supplements include meat, fish, bone, flax and cottonseed meal, milk by-products and wheat bran), as well as providing one solution to excess phosphorous in manure. The new varieties were expected to be available by 2000 or 2001.

Price:

US corn prices have recovered from some of the declines of '99/00, with Chicago March futures prices up about 10% at the end of 2000. The Chicago March corn futures prices were close to US$2.25/bushel in late December 2000, dipping into early January (around US$2.05 December 1999). At the US farm level, however, there appears to be little improvement from a year-ago. Corn prices received by the US farmer are expected to average about $1.85 ($1.65 to $2.05) per bushel in 2000/01 (US$1.80 in '99/2000, $1.94 in 98/99, $2.43 in '97/98).

North Dakota farm prices in the late fall were about US$1.62/bushel (US$1.58, a year-ago) and below the local US loan rate of US$1.69-1.84, but much of the crop was eligible for a US loan

deficiency payment top-up

In early January 2001, US corn prices were reported at $123-125/tonne, Cost & Freight included, at S. Korea. China responded by raising its corn price to US$110/T for February shipment onwards (from$103-105 previously), FOB or loaded on ship. Export subsidies are generally paid when domestic or acquisition prices are higher than international prices. China had been providing a US$44/tonne (368 yuan) subsidy on previous corn exports, and markets were awaiting further subsidy approvals, and expected them to be reduced to some degree. China has 2 authorized corn exporters. Export subsidies must be approved by China's State Development Planning Commission, and are administered by the China National Cereals, Oils and Foodstuff Import and Export Corp (COFCO).

Top-quality corn in Manitoba was about $120/tonne ($3.05/bushel) at major Manitoba corn dealers in early January 2001, up nearly $20/tonne from $100 ($2.54) a year-ago, and from $101 at the elevator at the start of November 2000.

On November 7th, 2000, the import price of US corn into western Canada was effectively doubled. Canada Customs and Revenue imposed a "provisional" countervailing duty of about 100% -- C$95/T or C$2.42/bu (US$62/T or US$1.58/bu) on grain corn imported into western Canada from the US (west of Manitoba/Ontario border). The duty was effective immediately and includes processed feed. Grain corn includes "all forms": whole kernel corn, processed grain corn (cracked, crushed, ground or flaked), corn mixed with other products (eg with millet, which can be separated from the grain corn after importation), etc. Industrial users that export corn-based products, like Manitoba's Gimli distillery, could later apply for a rebate of countervail after the product is exported. The preliminary results of the CCRA investigation show that grain corn from the US was dumped at prices that were on average US$1.01/bushel below profitable levels and was subsidized by an average US$0.57/bushel. The Canadian International Trade Tribunal's October 10th preliminary ruling was that US corn imports into western Canada had harmed the domestic industry. There is to be a full investigation, including scheduled meetings in February, on the injury to Canadian farmers, with a decision by March 7, 2001.

The previous countervail on imports of US corn was applied by Revenue Canada 14 years previously, on November 7, 1986, on all "grain corn" entering all Canada from the US. It was set at C$57/T or C$1.45/bu (US$41.22/T or US$1.047/bu), and later applied to corn processed for feed (crushed or ground corn), with or without additives. Industrial users that export corn-based products could later apply for a duty drawback. Yellow & white dent corn for processing into snack foods, and grain corn for BC use were exempt. (The duty was reduced to C$1.08/bu or C$39.68/T (US$0.849); then to C$0.46/bu or C$18.11/T, then phased out in mid-1989.)

Outlook:

US farmers continue to be reluctant sellers at prices below the US loan rate, and this appears to have had a positive effect on their basis levels. Some seasonal price pressure is imminent over the next few months as grain is marketed. Once again, large amounts of US corn were in emergency commercial storage after harvest, with a mandatory January 31 deadline for moving it. A substantial amount of farm-stored grain will also have to move into markets by early spring to make room for new-crop wheat and corn.

The Chicago futures market in early January 2001 was reflecting the expectation of about a 15-20% or US$0.40/bushel improvement in US corn prices to the end of the calendar year, partly on the expectation of a lower US currency value. US corn plantings, however, are expected to decrease only slightly in 2001, perhaps 1-2 million acres below the 79.6 million of 2000, and

production would remain huge. Current US carryover estimates show only a small decrease, so US supplies may not be much smaller in 2000/02. Demand is expected to continue strong, and prices should continue a slow uptrend, particularly with a slightly lower US dollar value which is expected. Continuing high stock levels and large supplies of competing cereal and coarse grains may prevent any rapid price recovery beyond about 5-10%.

BARLEY

World production of barley is higher in 2000/01 at a January USDA estimate of 133.8 million tonnes (128.0 in '99/00, 137.1 in '98/99). Canada had a larger crop (13.5 million in 2000, 13.2 in '99), along with the US (6.92, 6.10), the EU (51.77, 48.88), Australia (5.40, 5.04), Turkey (7.4, 6.6), and Russia (14,10.6). There were smaller barley crops in Eastern Europe (7.76, 9.63), and China (2.8, 3.0). World barley carryover will remain persistently high (23.6 million tonnes, compared to 25.7 at the end of '99/00, 32.3 million in '98/99). Close to half the carryover stocks are generally held in the EU. Carryovers tend to be feed barley

Total world barley exports are expected to be at 18.7 million tonnes, similar to 18.6 million in '99/00 (17.9 in '98/99). The EU exports the bulk of the world barley trade and, in 2000/01, is expected to export 10 million tonnes (10.5 million in '99/00, 8.9 in '98/99, 3.0 in '97/98). Australia began exports of newly-harvested feed barley in mid-November, although dormancy requirements hold off malting shipments until February to April. Australia is expected to export 3.6 million tonnes (2.87 in '99/00, 4.24 in '98/99). Turkey has been a relatively small exporter in recent years, with only 500,000 tonnes of exports projected for 2000/01 (200,000 in '99/00). In '97/98,Turkey exported 1.4 million tonnes reduced large stocks by competing pricewise with the EU with subsidies approaching US$95 per tonne, at great cost to the Turkish Grain Agency (TMO) budget.

China alone is expected to import 2.4 million tonnes (2-2.2 in '98/99 and '99/00), with perhaps 1.7-1.8 malting, and with some of the EU feed imports potentially used for malting. Japan's imports dropped from 1.75 million tonnes in '94/95 to about 1.45 million in '97/98, but have been 1.6 million or more since '98/99. Saudi Arabia is expected to import 5.4 million tonnes of feed barley (5.5 million in '99/00, 5.8 in '98/99).

As part of NAFTA (January1, 1994 implementation), Canada received an initial tariff rate quota of 30,000 tonnes on exports of barley and malt to Mexico, increasing by 5% per year until the year 2003, at which time the quota will be lifted. (Shipments in excess of the TRQ are subject to high tariffs (US$155/tonne or 128% on barley, US$212/tonne or 175% on malt, with phase-out in 10 years.) Mexico is the worlds 8th largest beer producer, has a domestic consumption averaging 48 liters of beer per person each year (about half that of the US) and a beer output capacity of 4.1 billion litres or more increased a new Zacatecas brewery and an expansion in Sonora. Foreign brands in Mexico account for less than 1% of total sales; however, Mexican cerveza or beer has found an export growth market into the US and Canada. Mexico has a number of taxes on imported beer, in addition to the 12% ad valorem tariff (including alcohol tax 21.5%, and value-added of 15%). Under the Uruguay Round, countries agreed to eliminate the tariff on beer by the year 2002. Barley and malt combined for over 7% of Canada's 1999 exports to Mexico.

Malting:

Weather problems in Canada, the US, Europe, and Australia have resulted in malting

barley supplies being tight in both 2000/01 and 1999/2000. In addition, in 1998/99, the low premium resulted in some deliveries of malting qualities into EU feed and intervention stocks and EU maltsters were having difficulty covering their requirements. Nearly 20% or about 10 million tonnes of the EU barley crop is usually malting quality. The Australian Barley Board (ABB) generally has 700,000-900,000T of new-crop malting barley for export. Australia generally accounts for 50% of the world malting barley exports (15% of the feed barley.)

Demand for malting barley and malt appears strong as demand for beer grows, particularly in China and Mexico. In much of China, beer is reportedly cheaper than bottled water. Local companies, like Tsingtao Beer, have been buying up many of the modern, but money-losing plants that were built by foreign companies since 1993, and have been re-instituting local brands. China tends to buy Australian new-crop malting barley for February shipment. Eastern Europe, S. America, and S. Africa are also expected to be major malting barley importers. Mexico tends to import about 200,000 tonne for brewing. The EU generally sells most of its malt and allocates export licenses in October and November.

The USDA is expecting US barley imports, virtually all from Canada, to be about 600,000 tonnes during October/September (627,000 in '99/00, 597,000 in '98/99). At least one maltster, Cargill Malt, has been attempting to encourage increased production of malting varieties in the northern US. At its plant in Spiritwood, N. Dakota, Cargill Malt will start buying malting barley directly from US farmers January, 2001, will offer production contracts for specific malting varieties, storage, etc.

Most of Canada's barley exports in recent years have been malting quality barley. Canadian malt exports have increased in recent years and have generally exceeded 600,000 tonnes annually (grain equivalent basis). Much of the world, including Asia, prefers 2-rows like Canada's Harrington, while the US is a major user of 6-Row (which Manitoba produces). Most of western Canada's barley plantings are in malting varieties, providing a large selection base. Nearly 100% of Australia's barley is two-row white aleurone types, while about ¼ of the EU malting barley is from the fall-plantings, mainly 6-row crop, the rest from the mainly 2-row spring crop.

Prices:

International barley markets are strong, benefiting from the US StarLink corn contamination, and the EU ban on beef meal in rations. In the late fall, Japan and S.Korea had halted US corn imports, boosting West Coast US barley prices. Late in the year, many of the large buyers of feed barley tend to wait for price declines to follow the Southern Hemisphere's December cereals harvest.

The EU is generally credited with setting the barley price scenario, with high production, high stocks, limited storage, and use of high export subsidies. Prices have been under duress since April-October, 1998, when the EC increased export subsidies 40%, and export feed barley prices dropped from about US$130-135/tonne to US$82-85/t and then to around US$75. In addition to feed barley subsidies, and the "feed" which may be of malting quality, the EC also subsidizes the domestic processing of malt, which has a negative impact on international barley prices. Europe continues to make WTO-legal use of export subsidies on barley. Early-season subsidies were around US$35/tonne (well below the high of US$85 last year, US$64-78 in the late fall), but markets fear larger subsidies in coming months, as the EU disposes of stocks before harvest. The Australian Barley Board's feed barley pool outlook is at A$161-166/t for '99/2000.

The Canadian Wheat Board's December "pool return outlook" for malting barley payments to producers was $182/tonne for Special Select CW-6 row barley, $207 for CW-2 row, and $143 for 1CW feed (little changed from the total payment of $182.21 for '99/00 6-row, $186.87 for 2-row, $135.38/tonne), basis port. Local off-board feed barley prices have been at an elevator bid or base level of around C$88/tonne (compared to $70/tonne a year-ago), with price improvements due to the drought and demand from southern Alberta, tighter good-quality supplies in Manitoba, and the corn countervail. Much of Manitoba's barley crop was affected with some degree of fusarium, and some cleaning and dehulling is being undertaken. Good quality, fusarium-free barley for hogs commands a premium.

Outlook:

International barley prices depend heavily on actions taken by the EU to reduce surpluses and increase exports. Europe will have more than 10 million tonnes of carryover, to offset any production declines from excess rain in late-2000. North American and Australian farmers are likely to increase plantings for 2000/01 harvest in hopes of attaining malting qualities. With a larger production area, and assuming favourable weather, the malting barley premium will not likely improve. World barley carryover is expected to be cut to 96/97 levels, down more than 2 million from 28.7 million in '99/00. Domestic feed barley demand will remain strong in western Canada as hog production continues to grow.

OATS

Global oat production in 2000/01 may be about 7% larger, at 26.2 million tonnes (about 24.4 million in '99/00, 25.9 million in '97/98). Crops were larger in Europe (including Scandinavia), and in the US, smaller in Canada, and little changed in Australia. Small amounts are imported by non-EU European countries (100,000 tonnes), by Japan (about 90,000 tonnes/year), and by a number of South American countries. The US is the world's major importer, Canada the major exporter. World trade has been about 1.9-2.3 million tonnes in recent years (excluding intra-EU movements).

The EU crop is substantially higher than the previous year, at 6.7-6.86 million tonnes (6.12 in '99/00, 6.15 in '98/99). Sweden's oat crop is estimated at 1.25 million tonnes (1.06 in '99, 1.14 in '98), with 1.38 million for Finland (990,100 in '99/00, 975,100 in '98). The EU is expected to export about 600,000 tonnes, similar to '99/00 (550,000 in '98/99). As a concession since joining the EU, oat exports from Sweden and Finland are subsidized with export "restitutions", even when other grains received none earlier this crop year. The subsidy is paid on the difference between high domestic or internal prices and lower external, or international prices. Any weakening of the US dollar effectively reduces the export price and results in higher EU subsidies or restitutions. The export subsidy allows the EU to ship oats into the southern US.

Australia's oat crop is tentatively put at 1.25 million tonnes, reduced by crop difficulties (1.09 million in '99/00, 1.80 in '98/99), according to USDA estimates. Deliveries of milling qualities were low by late December, because of lighter weights.

US harvestings in the past two years have been slightly smaller than in earlier periods (2.17 million tonnes harvested in '00/01, 2.12 million in '99). The US has imported 1.39-1.85 million tonnes of oats since 1995/96. In the 2000/01 trade year, the US is expected to import 1.75 million tonnes of oats (1.65 million in '99/00), 86% of the world's 2.03 million tonnes of imports.

US imports tend to be high-quality food and pony oats. The annual US use of oats for food, mainly in breakfast cereals, appears to have remained fairly constant over recent years, at around 1.4 million tonnes. US feed use of oats, however, has dropped to 2.5-2.6 million tonnes. US carryover stock levels have been in the 1.1 million tonne area, 1997/98-2000/01. Australian oats entered the US market for the first time in 1999, increasing Canada's competition. The EU continues to export Scandinavian oats to the US, in competition with Canadian oats, with the help of export rebates or subsidies, and this is expected to become a trade issue at the WTO.

Canada is the world's largest oat exporter, accounting for close to 60% of annual world exports, and exporting 1-1.3 million tonnes/year since '97/98 on (1.7 in '95/96). Canada's 2000 oat crop was 7% smaller at 3.39 million tonnes (3.64 million in '99/00, 3.96 in '98/99), which could keep exports to the 1.2 million tonne area. Manitoba's yield was an average of 76.6 bushels/acres, and production was up 19% to 1.02 million, a recovery back to the 1998 level. The rapid adoption of newer, higher-yielding varieties has brought Manitoba's average oat yields up dramatically in the past few years. As with other crops, Manitoba's early-harvested oats were good quality in 2000, but harvest-time rain on swaths, and some fusarium damage, reduced crop quality to an estimated 30% in the #1 & 2CW grades, 30% #3, and the balance #4 or lower. Total Canadian domestic usage and exports were rapid to late-December, and supplies appear to be dwindling fast.

Western Canadian oat processing capacity has increased dramatically. The capacity of the Can-Oat Milling plant at Portage la Prairie was doubled to about 34,000 tonnes/year (250,000 pounds/day) by July, 1998. Can-Oat's Saskatoon plant, with a capacity of about 102,000 tonnes/year (750,000 pound/day) opened in December, 1997. Can-Oat Milling milling specifications and recommended oat variety listings (upon request from Can-Oat). Canada imports about 5-600 tonnes of oats from the US, but also eats a large amount of oatmeal and processed oat cereal produced by US companies.

Price:

Global and Manitoba oat prices in 2000/01 are up from year-ago values, although still considered at low levels for feed energy. The lag in US corn exports began to exert more pressure on US coarse grain markets by late 2000.

EU exports subsidies started slowly in the early part of the crop year. In December only 43,500 tonnes had been covered (314,500 the previou[illegible]ear). By early January 2001, the EU had reached a crop year to date total of 384,000 tonn[illegible] oat restitution approvals (below the 466,500 tonnes granted the previous year). The early December 2000 maximum restitution on oats was 32.5-33.4 Euro/tonne. In January 2001, restitution on oats was 35.75-35.97 Euros/tonne (In 98/99, the EU was using subsidies of about US$70/tonne or US$1.05/bushel). Manitoba prices were generally around $78-94/tonne or $1.20-1.45/bushel for good feed quality. Top quality or milling was at $91-107/tonne or $1.40-1.65/bushel in late-2000 (C$100-107 or C$1.55-1.65/bushel early '99/2000, $1.60-1.80 in much '98/99).

Outlook:

Oat returns in 2000/01 were reasonably good, particularly considering the improved yields that have come with newer varieties, and relatively low input costs. There is likely to be considerable interest in growing oats in Manitoba and elsewhere in 2001, and Canadian plantings could increase 5-10%. Canadian oat milling has been at higher levels. Demand for milling oats for food, and feed oats appears to be gaining strength as markets look for alternative and non-

GMO food and feed sources. Manitoba and Canadian carryovers from current year supplies should be low.

In early January, forward oat prices for late 2001 were showing a 15-20% premium over current levels, which may offer some early pricing opportunities. US corn plantings are expected to slip slightly, which should help to hold prices, but if the Canadian dollar is stronger against the US, and global oat plantings higher, it would work against price improvements. The resumption of a substantial milling premium will require a drawdown in US and competitor high-quality carryovers.

RYE:

The low price of competing feedgrains has kept world production of rye at a fairly low levels over the past three years, with about 20.5 million tonnes in '2000/01 (19.9 in '99/00, 20.9 in '98/99, 25.0 in '97/98), well below the 37.9 million of '90/91. European countries (east and west) produce most of the world's rye, with much smaller amounts grown in Canada, the US, Australia, and elsewhere.

The EU-15 produces 25-30% of the global rye crop. EU production has been at historically high levels since '95/96, with about 5.67 million in '2000/01 (5.5 in '99/00. There are smaller 1999 rye crops in Scandinavia, with 122,000 tonnes in Sweden (160,500 tonnes in '98/99), and 32,000 tonnes in Finland (49,000). The Russian Federation produces another 25-30%, and had a much larger crop of 5.64 million tonnes in 2000, compared to poor crops the previous 2 years (4.78 in '99/00, 3.27 in '98/99).

Eastern Europe's domestic rye demand is also met almost entirely by western European production now, much of it from Germany or Finland. Current EU rye supplies are ample. EU carryover has been persistently high in export or government "intervention" stocks. The expansion of the EU into Eastern Europe is expected to result in much larger EU rye production potential. In the short-run, however, sizeable European exports of low-prices intervention rye into countries like Poland have disrupted local markets and trade relations. Poland's rye production dropped to 3.94 million in 2000, the lowest level since '92 (5.18 in '99/99).

Although rye is heavily used as a feed grain, it has a major use in whole-grain products or in bread across northern Europe. The former Soviet Union was a major market for Canadian rye in the past, but supplies from Germany and/or Finland were heavy from late-1999 on, and replaced much of Canadian product. EU food aid to Russia tends to include rye. Major export markets also include S. Korea, Japan, and China. Cost-conscious importers generally shift from higher-priced feed wheat to lower-priced rye and corn; however, all the major producers have large supplies of feed wheat to sell. S. Korea generally purchases large amounts of EU rye (has tended to buy the equivalent of about 2 million tonnes of feed-quality wheat and 8 million tonnes of corn, mostly US).

In North America, the rye content in the more common light rye breads is about 20 pounds of rye for 340 pounds of bread (one-cup rye to 17 cups dough). There is little Canadian production of dark rye bread or of consumer-packaged fine or coarse-milled rye flour, partly because of the effect of rye's oil content and flavour on the milling process, although niche market domestic demand appears to be increasing. Rye contains substantial amounts of soluble fibre. Rye's flavour is required in rye whiskey manufacturing, although rye comprises only about 5-6% of the grain mix or mash. Clean rye as a feed tends to be used primarily in mature hog rations.

Rye as a cover or nurse crop may also have some benefits in reducing pesticide use and in biological pest control. Fall-planted rye can be used as a minimum tillage and nurse or ground-cover crop. Agriculture Canada research in Ontario has shown that rye residue provides protection for processing tomatoes from late spring frosts, summer heat, wind-erosion on sandy soils, prevents some nitrogen leaching, provides a habitat for ground beetles that are prey on the Colorado potato beetle, and has a scent that apparently confuses the potato beetle's tomato-eating habits.

US rye production has been dropping in recent years. The crop totalled only 208,000 tonnes in 2000, down 22% in 1999's 280,400 tonnes, after large crops the previous 2 years (279,240 in '99/00, 308,900 in '98/99, 206,560 in '97/98)! Planting reached 1.34 million acres, but harvestings in 2000 were about 302,000 acres. Only 22-27% of the total rye acreage of about 2-3 million acres is generally harvested for grain, with the rest used as forage or cover crop. The US uses about 210-240,000 tonnes for food and beverage industries, and about 125,000-185,000 tonnes for feed. Approximately one-third of US domestic rye requirements have been met with imports from Canada and/or Scandinavia. US imports have been constant in the 75,000 tonne area from '98/99 on, and are expected to be the same in '00/01 (118,000 in '97/98, 137,000 in '96/97).

The Canadian rye harvest dropped off by about one-third to about 247,000 tonnes for 2000/01(386,600 in '99/00, 398,100 tonnes in '98/99, about 300,000 tonnes in preceding years). Manitoba's rye crop was down to 27% to 55,900 tonnes (76,200 in '99/00, 106,700 in '98). Canada's rye exports are generally split between the US and Japan, with small amounts to South Korea. Export and domestic demand has been brisk in early 2000/01, in comparison to some slowness in previous 2 years. With the increased demand for alternate, good-quality, and early-harvested feeds, Manitoba's rye carryovers have been low or non-existent for several years.

Price:

European rye from Germany was released from intervention stocks in early December 2000 (13,540 tonnes at a minimum sales price of 85.72 Euros/tonne). (In October/November 1999, European rye was reportedly priced as low as US$75/tonne at Korean ports, after a US$65/tonne export subsidy.) Rye tends to be substituted for other feedgrains, including US corn and feed wheat, because of its lower prices, despite its lower feed value.

Canadian rye prices continue to be pressured by the low prices of other coarse grains, and the lower demand in the US. Rye has not been traded on the Winnipeg Exchange since 1995. Local Manitoba rye prices for rye destined mainly for the US milling market (with good falling numbers) previously priced double the value of other sales of #1 or #2 rye. Since '98/99, however, there appear to have been few milling premiums offered, and top-quality has generally been $63-77/bushel for good #1 or #2 in Manitoba. Feed qualities have generally been $47-63/tonne ($55-63 for good feed in early '98/99, $80/tonne or $2/bu for feed and $3.50-/bushel for milling quality in '97/98). In much of 2000/01, in December 2000 and early January 2001, #2 rye was priced at a base price of about $75/tonne, up $5/tonne or so from '99/00.

Outlook:

Canada's fall rye plantings for 2001/02 are down 2% to 404,600 acres (414,900 planted for '2000/01, 515,900 for '99/2000). Manitoba's fall rye plantings for 2001/02 are unchanged at 60,000 acres (85,000 acres in for '99/2000, 120,000 for '98/99). US plantings are expected to be unchanged to lower because of the late harvest and moisture last fall. With the lower prospective

supplies and early harvest date, rye prices in 2001/02 should improve in the area of 5-15%, still at very low levels. Early harvestings of fall-planted feed grains are likely to be in demand in Manitoba in spring 2001. The resumption of a milling premium will require a drawdown in US and competitor high-quality carryovers.

OILSEEDS

Supplies are high but demand is strong and carryovers are declining for oilseeds in 2000/01. International oilseed supplies are forecast to increase only 3.07 million tonnes in 2000/01, based on a USDA estimate of a record 303.47 million tonne global crop (299.58 million in '99/00, 294.1 in '98/99), and 30.53 million tonnes of carry-in. There may be increases of 6% in soybean production, 7% in palm kernel, and smaller increases in cottonseed, peanuts, and copra, but declines in global canola/rapeseed, sunflower seed, and flax.

Production of the major world vegetable oils continues to climb in 2000/01, reaching an estimated 86.67 million tonnes, up 2.2 million tonnes. Soyoil is expected to reach 25.87 million tonnes (24.83 in '99/00, 24.69 in '97/98). Palm oil output is now estimated at a surprisingly high 22.68 million tonnes (up from 21.06 in '99/00, 19.2 in '98/99), with more mature trees in production in Malaysia and Indonesia, and well recovered from the effects of weather and man-made environmental disasters. Palm production (22.68 million), plus palm kernel oil (2.82 million), is now virtually as large as soyoil. The increased world demand for protein meal has resulted in crushing for meal, which has increased the excess oil output, particularly when including palm. Nevertheless, with a relatively short storage life for most of the oils, oil consumption will be high and prices low, resulting in carryover remaining static at about 7.9 million tonnes.

World oilmeal production is potentially up about 4 million to 173.44 million because of the larger soybean crops. Consumption is expected to be up nearly 4 million, dropping carryover to 5.34 million tonnes (6.12 million at the end of '99/00). World fish meal production has risen about 2 million over the past 2 years (estimated at 7.3 million tonnes for the calendar year 2000), although the S. American catch may now be declining. Demand for fishmeal is strong, given increases in aquaculture and livestock production in China, and livestock feed demand from the EU.

The world soybean crop is estimated at 167.18 million tonnes, close to 10 million more than the 157.68 million of '99/00, with increases in all major producing areas. Brazil's March/April harvest is projected at 34.5 million tonnes (32.5 in '99/00, 31.3 in '98/99). Argentina's March/April harvest is put at 23.5 (20.7 in '99/00, 20.0 in '98/99).

China's import requirements have been fueling much of the world oilseed market price strength for the past two to three years, and import requirements are expected to continue to grow in the future. China's current consumption levels are put at 32.83 million tonnes of meal (including fishmeal), and 17.8 million tonnes of oils and fats, a total of 50.63 million. China's own oilseed production has steadily grown to about 46.5 million tonnes in 2000/01 (43.2 million in '99/00). The soybean crop alone is estimated at 15.4 million, an 8% increase from 14.3 million in '99/00 (15.1 in '98/99). China has been importing large amounts of soybeans and rapeseed (in addition to wheat and malting barley); however the larger crops are expected to result in a dip in soybean and rapeseed imports. China is expected to reduce soybean imports by 2.3 million tonnes to 7.8 million (10.1 million tonnes in '99/00, 3.85 in '98/99). China's current import policies favour oilseeds for their crushing industry, with a value-added tax on soymeal, and a lack of vegetable

oil import licenses. Still, China is expected to import 2.17 million tonnes of oils, mainly palm, but some soy and rapeseed.

India has also drastically increased its imports of vegetable oils over the past few years, with calendar year 2000 imports at about 5.2 million tonnes (0.5 million in '94). India's oilseed crops were reduced by dryness to about 22.35 million tonnes in both 2000 and 1999. Improvements in irrigation, crop inputs, and yields are lagging. India favours oil imports to seed imports, and has been the world's largest edible oil importer since '98/99. Imports in '00/01 marketing year are put at 4.78 million tonnes (73% palmoil, 16% soyoil, 6% sunoil, 4% rapeoil). Continuing strong consumer demand and phytosanitary barriers against soybeans are expected to keep India's veg. oil imports high. The Indian government has been controlling vegetable oil imports with import tariffs, and was unsettling world markets in December and early January, 2001, with suggestions of increasing those tariffs.

The EU-15 grows only 1-1.5 million tonnes of soybean, but crushes 15-16 million tonnes. Soybean imports in recent years have been 15-16.5 million tonnes per year and, in '00/01, imports are expected to be 15.9 million (up from 15.0 in '99/00, 16 million in '98/99). Although some consumers are opposed to GMO soybeans in foodstuffs, they are allowed for use in EU feeds.

The US soybean crop alone reached a record 75.38 million tonnes, 45% of the world crop (72.2 in '99/00, 74.6 in '98/99). US soy plantings were a record 74.5 million acres in 2000, 72.72 million harvested (73.73 million seeded in '99, 62.6 million in '95). Soy yields averaged a good 38.1 bushels/acre, an improvement from '99's 36.6 bushels from late-season drought. Yields in the southern US were affected by the soybean cyst nematode, and by "charcoal rot", a fungal disease of the roots and lower stems that thrives in hot, dry weather. US soybean exports are expected to be a record 26.5 million tonnes. US soybean carryover may be about 1 million tonnes higher, at around 8.71 million tonnes (7.83 in '99/00, 9.48 in '98/99), although there is some expectation that increased EU meal demand in the latter part of the crop year may increase usage and decrease carryover.

Mandatory labeling of Genetically Modified crops will begin within the next year or so in a number of countries, as a result of consumer demand. To date, low prices are felt to have largely offset the effect of the GMO issue on sales. A number of processors and food manufacturers, however, have or are switching to voluntary labeling in advance. The demand for identity-preserved, non-biotech soybeans is still small, compared to total exports. The American Soybean Association has been expecting non-biotech soybean demand in the year 2000, to be about 200,000 tonnes from the EU, with 5-700,000 tonnes from Japan, with little or no forward contracting by other countries. So far, 80-85% of EU and Japanese demand is expected to still be non-segregated varieties for feed, and unaffected. Roundup Ready® soybeans are the only US biotech soybeans grown commercially grown in 1999 or in 2000, they have import approval from the 37 countries that require clearance for biotechnology-derived crops, so there are no legal restrictions that affect their exports.

Price:

At Rotterdam, vegetable oil prices dropped another 10% or more in '2000/01, slipping further from the US$600-plus levels of '97/98 and early '98/99. Rotterdam prices for soyoil were around 321 in mid-December 2000 ($401 in the early fall of '99). Crude palm cif NW Europe, dropped to US$260, 23% below the Oct/Sept 99/00 average (US$338), about half that of '98/99 ($514). By December, Rapeoil had regained an $18 premium over soyoil in Europe, and sunseed had held on to $75-80/tonne premium as in '99/00. Linoil had failed to recover, and was around

US$385, 13% below a year-ago (US$445).

Protein meal prices began rising in Europe as November progressed; 44-45% protein soymeal improved to US$230 by mid-December 2000 (US$191 in 99/00, $163 in 98/99).

The US farm price is expected to average US$4.75/bu ($4.50 to $5.00) in 2000/01, up only 3% from the '99/00 average of $4.63/bu. Soybean meal prices are expected to average 7% more than in '99/00 at US$180 ($170-$195 per short ton). In contrast, soyoil prices are expected to be down 9% from the previous year, to an estimated average of US$0.1425 ($0.1325-0.1525) per pound. Loan Deficiency Payments contained in the 1996 Farm Bill will help to keep US plantings and carryovers high.

Outlook:

Global demand for vegetable oils and meals is strong, but supplies are large. Some seasonal dips in global production should provide some pricing opportunities. The growth in palm oil supplies was expected to show a seasonal slowing in early 2001; however, production levels so far this crop year have been higher than expected, as have inventories. US farmers are reluctant marketers, and prices will likely rally periodically to obtain deliveries, particularly prior to the March/April Brazilian harvest. Other seasonal improvements and crop "scares" are likely to provide further pricing opportunities.

A record US soybean crop is expected in 2001. Government programs are expected to keep US soybean plantings high, despite low market prices, with some small (1-2 million acre) shifts from corn to soybeans, partly because of high nitrogen costs. Recent corn/soybean price ratios do not suggest more than a small shift in swing acres into corn. US soybeans tend to be most at risk if weather turns hot and dry in the mid-summer, so weather rallies are likely. Soybean prices are expected to be 5-10% higher in 2001/02 on continued demand strength. Futures prices, however, have already been reflecting a 9% improvement by January 2001, and now may be more prone to losses than gains over the year.

CANOLA

After the record world crops of 99/00, canola/rapeseed planting and productions dropped off sharply in 2000/01. World rapeseed production is estimated at about 37.6 million tonnes down 11% or 4.7 million tonnes from the record 42.3 million tonne crop of '99/00 (36.1 -'98/99, 35.3 - '97/98). World rapeseed exports hit a high of 11.04 million tonnes in '99/00, but are expected to drop to 9.99 million in '00/01 (just below the '98/99 level of 9.15, but well above the 4.95 million of '97/98).

Area reductions and persistent dryness have steadily reduced India's rapeseed/canola/mustard crop to about 4.4 million tonnes (down from 5.1 million in '98/00 and 4.9 million in '98/99). India imports large quantities of palm oil, but also about 200,000 tonnes of canolaoil, as well as some soyoil and sunoil.

China's rapeseed production reached a new record of 11.0 million tonnes (10.13 million in '99/00, 8.3 in '98/99). China is expected to continue to import large amounts of canola/rapeseed, although at a lower rate than the previous year. China's '00/01 canola/rapeseed imports are estimated at 2.5 million tonnes (3.68 million in '99/00, 2.150 in '98/99) China began importing large quantities only in '97/98, with a total of 288,000 tonnes. China also is expected to import 95,000 tonnes of canola/rapeseed oil in 00/01. China purchased large amounts of

canola from Canada early in the crop year over the past 3 years.

Japan imports approximately 2.2 million tonnes of canola/rapeseed per year. Japan also crushes roughly 200,000 tonnes of canola per month or 2.4 million/year. In Japan, canola oil is excluded from mandatory labeling. Nevertheless, Jusco, the 3rd largest supermarket operator, will GMO-identify all of their private label products (GMO is used, GMO is not used, and/or unknown). Jusco's private label non-GMO canola oil (from Australian canola) currently has about 10-20% of sales volume and is sold at about a 34% premium over national brand canola; "unknowns" comprise about 30-40%. In the summer of 2000, Japan started the first futures contracts for non-genetically-enhanced soybeans.

Australia's canola crop has climbed steadily from about 300,000 tonnes in 1994/95 to about 2.43 million in '99/2000, then dropping to 1.61 million in '00/01. Australia has exported non-biotech canola to both Japan and the EU. Aventis and Monsanto are planning on introducing commercial seed supplies of GMO canola in Australia by late 2002 or early 2003.

Rapeseed output in the EU-15 peaked with the 11.32 million tonnes of '99/00, and dropped back to 9.2 million for 00/01. Supplies dropped back to around 10 million tonnes, similar to 2 years ago, and down from 12.7 million of 99/00. Europe's rapeseed carryover is expected to return to the more manageable, 245,000 tonne level or less by the end of the current crop year. Europe's imports of Canadian canola have essentially been blocked by France for the past 3 years; this year should end the 2-year moratorium that was proclaimed on all genetically modified (GMO) rapeseeds. Although France was faulted by the European Court for refusing to allow EU-approved GMO corn varieties, there is no indication of any imminent improvements in market access to US corn or Canadian rapeseed.

The US harvested 48% more canola in 2000 (914,880 tonnes, 618,560 in '99, 706,610 in '98, 355,100 in'97) and approximately 2,600 tonnes of high-erucic rapeseed (2,300 in '99, 2,880 in '98, 790 in '97). US farmers planted about 1.57 million acres of canola and 4,000 acres of rapeseed in 2000. North Dakota and Minnesota account for more than 90% of US canola production. Samples of the 2000 crop averaged 41.4% oil and 21.9% protein (US standards 40% and 20%). More than 70% of the plantings should be within proximity of the N. Dakota Velva crusher. Northern US farmers were heavy shippers of canola to Manitoba's Altona plant in the fall of 1999 when US prices were much lower than Manitoba's (and they were able to collect a Loan Deficiency payment). The Canadian dollar is still low in comparison to the US dollar, but with Manitoba and N.Dakota prices converging in early 2000, there is less incentive to deliver into Canada. The farmer-owned, Carrington, ND, cold-press crusher, built in 1997, is also capable of crushing a variety of oilseeds, including members' canola. (The US was apparently exporting canola to Europe in '98/99!) A number of seed treatments, and in particular, "Lindane", a seed storage treatment, are not allowed on exports to the US after June 1, 1998 or to Europe. The US continues as a major market for Canadian canola oil and meal.

Canadian canola plantings and yields were sharply lower in 2000. Production dropped to 7.12 million tonnes from the record 8.8 million of '99 (7.64 million in '98/99). With a carryin of 2.07 million tonnes (633,000 the previous year), the total crop year supply was close to 9.2 million tonnes, before imports. (Imports were 124,000 in '99/00, 157,000 in '98/99). Canadian crushing is expected to surpass the 3 million tonnes of the past 2 years. Canadian farmers have shifted rapidly to biotech canola varieties, which represented an estimated 25% of the crop in '97, 50% in '98, with an estimated 66–75% in '99 and 2000. Manitoba farmers planted approximately 28.4% of their 1999 canola acres to conventional varieties, and 64% to herbicide tolerant varieties (57% in '98, 38% -97, 14%-'96). Canada's canola exports were rapid in early 2000/01 and, in

early January, there were reports of another cargo sold to China. While China's purchases may slow as the crop year progresses, demand from other buyers is expected to increase (because of the lower competitor supplies of canola and sunseed). During the past three years, China has rivaled Japan as Canada's major export canola market. Oil and meal exports, particularly to the US, are expected to be higher. Manitoba's third and newest crushing plant at Ste. Agathe continues idle and for sale. Canadian canola carryovers have been price-depressingly high in recent years, and are expected to now be drawn down considerably.

Canadian canola sales to Mexico have apparently been limited by the low demand by Mexican livestock producers for meal portion. Mexican crushers report a good market for oil, with five or more new canola oil brands in the last few years. Demonstration feeding trials are expected to promote canola exports to Mexico in upcoming years.

Prices:

There was a surge in US soybean prices before Christmas on the prospect of increased soymeal demand from European livestock feeders. In the futures market, canola prices have not regained the large premium over soybeans that existed prior to 1999, despite a continuing weak Canadian dollar and declining canola supplies relative to soybeans. World supplies of vegetable oils, particularly palm, continue in a "glut", with crushing driven by the demand for meal. By mid-December 2000, Rapeoil had regained an $18 premium over soyoil in Europe, but at US$339, was still US$20/tonne below the '99/00 average. Rapemeal in Hamburg, Germany, was US$167/tonne, also still US$20/tonne below '99/00. Oil margins are somewhat improved since last spring, but are not considered good by the crushers.

At the local Manitoba elevator, canola prices improved only to the $225/tonne ($5.25/bushel) by early December, easing to $221 by early to mid-January ($220/tonne or $5.20/bushel in December/99, $320-330/tonne or $7.30/bushel in August/98). The canola "breakeven" has long been considered $8/bushel. The local price of canolameal has risen to $200/tonne (mainly $150-155 post- harvest 1999).

Outlook:

Current population projections suggest an annual growth in demand of about 2 million tonnes of meals, 1 million tonnes of oils, in upcoming decades just to maintain recent consumption levels.

World carryover of canola/rapeseed is expected to drop to around 320,000 tonnes (430,000 in '99/00). Although spring plantings may occur in the EU, there appear to have been losses in fall-sown rapeseed from heavy rains and field flooding, and somewhat lower harvestings are expected in Europe. If biotech varieties become more of an issue by spring, traditional seed may be in increased demand; however, at this point in time, segregation appears unlikely to occur.

As Canada's supplies are reduced towards a lower carry-out, there should be a late-season improvement in prices. Many are expecting Canada's canola plantings to drop again in 2001/02, because of the reduced returns and higher input costs, in favour of a shift to lower-input-cost grains. In areas of Manitoba, however, the shift from canola to grains will be heavily influenced by weeds, fusarium risk and available fusarium-free grain seed. Canola acreage may continue high where there are major weed problems.

Futures prices for canola are showing some price improvements over the coming year, on the expectation of lower carryover and lower plantings into 2001/02. Canola prices will continue under pressure from the large US soybean supplies; however, with the tighter supply, a return to

a small premium over soybeans, and a 5-10% price improvement is expected.

FLAXSEED

World flaxseed production is lower in 2000. European estimates put the crop at 2.94 million in '00/01 (3.11 in '99/00, 2.73 in '98/99, 2.26 in 97/98, 2.4 in '96/97). China is the world's largest producer of flaxseed. The EU and the US are the major importers.

China increased production 8% in 2000/01, with production of about 625,000 tonnes (580,000 in '99/00, 540,000 in '98/99, 393,200 in '97/98). China exports only small amounts of flaxseed, aside from the 20,640 tonnes of 1995 and 10,660 of 1999. India grew around 274,800 tonnes in 99/00, with the '00/01 production tentatively expected to be similar.

Argentina has virtually abandoned flaxseed production, with steady declines since the 514,200 tonnes of '90/91, or the 152,600 of '96/97. Argentina's production, harvested in December/January, is estimated at only 48,000 tonnes for 2000/01 (85,000 in '99/00, 75,000 in '98/00).

The EU flax crop dropped to an estimated 270,000 tonnes (548,000 in '99/00, 312,000 in '98/99). The area for harvest was also nearly halved in '2000, to about 654,820 harvested acres (265,000ha). Flaxseed is a shorter-season crop, and when heavy fall rains in 1998 reduced winter cereal planting, it caused a shift to flax in the spring of 1999. The crop is generally sown in March in France and England. Germany, the Netherlands, the UK and Belgium all increased their crushing of flax or linseed in recent years. Usage has increased, however, and about 500,000 tonnes of flaxseed imports during 2000/01 are expected, much of that from Canada.

The European Commission has adopted a reform of the industrial flax and hemp regime, effective for 2000/01, that would bring the crops into the Arable Area Payment Scheme, and would require a sales contract with a processor. By 2002/03, the per hectare payments for linseed producers are to be down to the level of cereals. There will be additional supports for flax and hemp straw processing for fibre, on the basis of the quantity approved by the processor, with differing amounts for long or short flax or hemp fibres, and with the support for short fibres limited to 5 years. The EU compulsory set-aside is set at 10% through to 2006 (unless altered), but industrial crops can be grown on set-aside.

US flaxseed production has increased steadily in recent years. In 2000, US production was up 36% to about 272,600 tonnes (199,761 in '99, 170,400 in '98, 61,470 in 1997, and 40,700 in 1996). Plantings have steadily increased to 536,000 acres in 2000 (387,000 in '99, compared to 151,000 in 1997). About 85-90% of the US crop is in North Dakota. The larger production has sharply reduced US imports of Canadian flaxseed.

Canada's flax production was only 693,400 tonnes, down 32% from 1.022 million in '99, (1.08 million in'98, 895,400 in'97). Manitoba's production was down 24% in 2000 to 205,700 tonnes (271,800 in '99, 360,700 in '98). Flaxseed exports were improved in the August/December period, and carryovers will be low. Importers of Canadian flaxseed have tended to be the US, the EU, and some to Japan, China and Korea.

Linola is a registered trademark of the Commonwealth Scientific and Industrial Research Organization of Australia (CSIRO). Since 1992, development of low-linolenic linseed for the edible oil market has been a joint venture between CSIRO and United Grain Growers Ltd of Winnipeg. Low-linolenic flax has a higher linoleic content, oxidizes less quickly than high-linolenic oil, and therefore has a longer shelf-life. UGG develops Linola varieties for Canadian and European

production, with low linolenic genetics from the CSIRO lines. Low-linolenic, or "edible" types of flaxseed ("Solin") now produced in Canada may not necessarily be reported in all the official statistics. The edibles are yellow, and are being used locally for baking as a sesame alternative, etc., or exported and crushed in Europe.

Uses for traditional flaxseed types and their products have been increasing in recent years, particularly as the nutritional benefits of flaxseed in both human and livestock diets are becoming better understood. Omega-3-enriched eggs from hens on a 10 to 15 per cent flaxseed diet are fast sellers. Alpha linolenic acid (ALA) accounts for 55-58% of the fatty acids in traditional brown flax, and both the oil (omega-3) and the fiber (lignins) are being credited with human disease prevention. The US Food and Drug Administration is expected to soon allow a statement that omega-3 fatty acids reduce the risk of coronary heart disease by lowering triglycerides in the blood. In addition, new research shows 5 per cent flaxseed in a sow's diet increases piglet weight. Linoleum production also continues to grow; linoil comprises about 35% of linoleum flooring. In 1998-99, linoleum production used an estimated 5-7% of the 8-850,000 tonnes of world linoil production. The world's largest linoleum producer, Forbo-Krommenie BV (with about a 60% share of the world market) is targeting a 10% per year production increase through to 2005. Flax fibre is also been used to some degree in automotive manufacturing, as well as in currency paper production.

Price:

Flaxseed prices have been at extremely low levels in recent years, with the March Winnipeg Commodity Exchange futures ending 2000 close to $255/tonne, dropping to $251 around the start of 2001 ($220/tonne '99/00, $340 '98/99). Flax markets no longer have a large December/January harvest of Argentine flaxseed to deal with; however, the winter shutdown of Thunder Bay remains a seasonally price-depressing factor. Linoil in Rotterdam dropped to US$385/tonne in late December 2000 (US$435/tonne in Dec/99, $665 Dec/98, $610 Dec/97). Linmeal at US$177/tonne, however, was improved from the $139/tonne September/October average of 99/00, or $129 in '98/99. At the Manitoba elevator, flaxseed started 2001 at around $224.90/tonne or $5.71/bushel (up from the $192 or $4.88/bushel of Jan/2000).

US flaxseed is considered a "minor" oilseed and is eligible for a national loan rate of US$9.30/cwt (US$5.21/bushel) and for a Loan Deficiency Payment that compensates when market prices fall below the loan. At the N.D. county level, the loan rate becomes US$4.75-5.66/bushel (US$8.49-10.11/cwt).

Outlook:

US and EU programs have encouraged production increases and had a price depressing effect on prices, and producers will likely continue to plant for the programs, weather permitting. Changes to the EU farm program had been expected to further reduce flax plantings for 2001 to about 500,000 acres (200,000 ha). Although Europe has been expected to grow less flax in 2001, there is the possibility that they may repeat the previous practice of planting short-season flax in March/April to replant on fall crops that were washed away, and to replenish supplies. Europe is expected to resume buying flaxseed from Canada in the spring (for Thunder Bay shipment) even if their inventories are large, in the expectation of tightening Canadian supplies and the Canadian dollar improvement that banks have been forecasting.

Prices, then, will be dependent on EU and US plantings. Prices are not expected to improve more than about 5% -10% from current year levels. Current prices may provide some

pricing opportunities.

FIELD PEAS

Global pea production in 2000/01 rose to 11.7 million tonnes, according to the FAO (11.3 million in '99/00, 12.17 in '98/99, 12.04 in '97/98). In '98/99, pea markets had benefited from damage to foreign pulse crops; in late 2000, they were benefiting from the increased demand for alternate protein feeds in Europe and China. Pea production in 2000 was higher in Canada and Australia, but lower in the US, Europe and India.

Australia's pea harvest was not yet finished in December and, despite drought, is estimated by the FAO at 356,000 tonnes, similar to '99/00 (298,000 in '98/99, 316,000 in '97/98). Australia is targeting markets in Asia and Pacific Rim countries with a white pea for flour, at a premium to Canadian yellow peas.

Australia is also having considerable success marketing an additional, high-protein legume crop, lupins. The product competes directly with soybeans for human consumption. The Grain Pool of Western Australia hit its first ever, seasonal, million tonne sales level for lupins in early September 2000. The new crop, however, is put at 721,000 tonnes, less than half the 1.99 million of 1999. Australia's lupins are sold into Europe on an identity-preserved (IP) basis. The EU Commission has endorsed lupins as a safe food ingredient (recently approving a "standard" label, instead of the "novel" label previously required). IP lupins are to be processed into a protein for use in cakes and pastries, etc., as a substitute for soybeans (for the non-GMO consumer market). Japan's Ministry of Health and Welfare, in late-December 2000, approved the use of lupins in Japanese soy sauce (shoyu). Lupins can be steamed and fermented to produce soy sauce (330 grams of lupins per litre), with a taste apparently very similar to soybeans. (Japan uses 330,000 tonnes of soybeans/year for soy sauce, consumes one billion litres of soy sauce/year, 8.5 litres/person.)

Pea crops in Europe were smaller in 2000/01 at about 5.66 million tonnes (5.95 in '99/00, 6.83-'98/99, 7.35-'97/98). Europe buys Canadian and Manitoba feed peas, and historically has been a major customer of Canadian food peas. Europe has announced a 6-month ban on beef meat and bonemeal in all livestock rations beginning in July 2001, but demand for alternate feeds began to impact feed markets in late-2000. Europe's rejection of genetically modified US soybeans and corn is also expected to have a positive impact on the demand for peas as a substitute high-protein feed. Europe's pea crops are generally harvested in July, so Manitoba producers' spring sales opportunities into this market tend to focus on early May, with shipment through Thunder Bay, and with prices related to European new-crop prospects. France's pea exports were reportedly competing with low prices against Canadian and US peas into the Indian subcontinent in '99/2000, but domestic EU prices have since increased and reduced competitiveness.

India is expected to continue to import food-quality peas for flour, etc. In India, the major summer or Kharif pulse crops (Sept/Oct harvest) are Green beans (moong beans), Black Matpe (Urad), Pigeon Peas (Arhar), and Cow Peas (Lobhia). The major winter or Rabi pulse crops (Mar/April harvest) are Chickpeas, green peas, and Lentils. Winter crop yields are higher than summer yields, represent about 55% of total pulse plantings, but 60-65% of the production. India's production has not kept pace with population growth, shortfalls have increased, and available domestic supplies, on a per person basis, have been nearly halved since the 1960's (to 36 grams/day/person).

The US dry pea crop dropped over the past three years to total about 156,720 tonnes in 2000 (260,727 in '99, 304,454 in '98). Plantings dropped 30% to 188,000 acres (268,600 in '99, 323,400 in '98). Dry peas are planted in only 5 states, 4 of those in the Northwest, where excess rain often alternates with irrigation requirements. Plantings dropped sharply in the Northwest in 2000 (Washington, Idaho, Montana, with only 4,000 in Oregon). N. Dakota plants 24-35% of the total US pea area, with 66,000 acres in 2000. In mid-December 2000, the USDA (CCC) offered foreign aid tenders to US processors for peas, lentils, and beans, bringing all but beans above previous December levels. Large-scale USDA (CCC) purchases for foreign food aid had been slow since the high prices for peas and lentils during '96/97's short crop; however, peas continue to be included in CCC purchasing tenders, with new tenders in late-2000. (The CCC has a longer-run policy objective of shifting to aid through foreign credit financing and investments, rather than through commodity aid shipments.)

Western Canada's dry pea production increased to a record 2.86 million tonnes (a 47% increase from '99's 2.25 million tonnes), with supplies added to by a large carryover. Manitoba's crop rebounded 74% to 160,500 tonnes (92,000 in '99, 223,200T in '98). Manitoba's own hog production has provided an outlet for locally-grown peas, with some going directly off-farm into hog feeding, providing some offset to limited fusarium-free feed barley and wheat supplies. Pea exports eastward via Thunder Bay in August-December 2000 were close to 350,000 tonnes, more than 45% above the previous year.

Trade agreements are expected to stimulate Canadian exports of dry peas to Chile and to China. The Canada/Chile Free Trade Agreement provides an 8% tariff on Canadian food and/or feed peas, and hopes are that the tariff on feed peas will be reduced to zero, as for soymeal. In April 2000, Canada requested a lowering of China's value-added tax (VAT) on dry pea imports from 17% to 13%. When China is accepted into the World Trade Organization, which is expected in early 2001, Canadian dry, feed peas are to be given tariff parity with soymeal, as a result of the bi-lateral Canada/China agreement. China has been short of protein and energy feeds and has been importing large amounts of soybeans and meal for livestock feeding. China's Feed Industry Association recently endorsed the use and import of feed peas in livestock rations.

Manitoba's Portage la Prairie pea processing plant reopened in the spring of 1997. A Parrish and Heimbecker Ltd. (P&H) processing plant in Saskatoon is expected to supply the Portage plant with 5,000 tonnes of pea starch and protein products per year for refining. (P&H purchased the former Woodstone Technologies plant, April 1, 1997.)

PeaCan Meal Processors Co-operative Ltd. is proposing the construction, installation and operation of a feed mill and distributing facilities in the RM of Miniota, Manitoba. The peameal processing plant would crush and mix peas with canolameal for local livestock feed use. Output capacity is to be 20,000 tonnes of finished product per year on a single 8-hour shift, doubled by adding a second shift. The group is currently in the process of raising capital for the project and hopes to be in a position to begin construction in the summer of 2000.

Price:

Pea prices have improved since the 1998/99 lows, after weakening along with feedgrains. The low prices over the past few years have made peas somewhat more competitive and accepted in feed rations, potentially with canola or canolameal, in substitution for soymeal! Feed use has become the pricing base for peas, with US cash pea prices more closely influenced by Chicago soybean and soymeal prices than in earlier periods, and a Winnipeg Commodity Exchange pea contract that has shifted to Canadian feed peas.

Pea prices rose following harvest, along with other grains and oilseeds. By early January 2001, WCE February contract peas were $4.75/bushel or $174/tonne, 1/3 more than the previous year ($131 Jan 2000). After harvest, prices to farmers for yellow peas for food use (#1 and 2) at major dealers were $146.90-165.35/tonne or $4-4.50/bushel ($156-165/tonne or $4.25-4.50/bushel in Nov/Dec/99; $128-156 or $3.50-4.25 in '98, $167-239 or $4.55-6.50 in '97, $211-245/T or $5.75-6.67 in 96). (Most Manitoba pea exports will move through Thunder Bay; pricing of greens tends to be through Vancouver at a cost of about $1.27/bushel or $46.60/tonne.)

By early January, feed pea prices at the Manitoba elevator were at a base price of around $3.90/bushel or $143.50/tonne, up about 9% over the year. In November/December, feed pea prices delivered to major dealers were $128.60-147/tonne or $3.50-4.00 bushel. After the 1999 harvest, feed peas were $128-138/tonne or $3.50-3.75, with some for export up to $4/bushel ($110-121 or $3-3.30 in '98, $158-174 or $4.29-4.75 in'97, $184-211 or $5-5.75 in '96).

Green peas #1 were $141.50-165.35/tonne or $3.85-4.50/bushel in November/December 2000 ($156-165 or $4.25-4.50 in '99, $147-175 or $4.00-4.75 in '98, $224-294 or $6.10-8.00 in '97, $235-275 or $6.40-7.50 in '96). Very limited supplies of Maple peas have in the past been at a 50 cent/bushel premium over the top yellow price. Specific varieties of the small yellows tend to be around large yellow prices.

Outlook:

Demand for dry peas is expected to continue to grow in 2001/02, both in the local Manitoba market and globally. Pulse crops are becoming an increasingly attractive alternative to niche markets concerned about GMO's. They are also proving an alternative to meat and to meat by-product proteins in Europe. Pea carryovers from '00/01, meanwhile, should be virtually eliminated in Manitoba and sharply reduced elsewhere. In response, higher levels of pea plantings are likely, added to by the high cost of fertiliser requirements for other crops. Pea yields and net returns are still considered unacceptably low by most Manitoba producers, although the anticipated return to more normal crop conditions in 2001 should improve most crop yields. Also disappointing has been the shift in recent years to pricing the majority of the crop at feed, rather than food market prices. Pea yield potential has increased in recent years, putting increased emphasis on per acre rather than per bushel returns. (Extremely high yielding varieties--up to 100 bushels/acre--have been tested in the northern US, however, there have been no such commercial varieties available yet.)

Pea prices should improve seasonally during '00/01 prior to the opening of the Thunder Bay shipping season. Europe's pea crops are harvested in July, so Manitoba producers' spring sales opportunities into Europe tend to focus on early May, with shipment through Thunder Bay, and with prices related to European new-crop prospects. For 2001/02, N. American pea markets will continue to be overhung by high supplies of competing US corn and soybeans, which could keep pea prices close to current levels.

BEANS, DRY

Global bean production is up an estimated 3% in 2000/01. In both 2000 and 1999, production was at record levels of over 19 million tonnes, according to FAO estimates (19.6 million in '2000, 19.14 in '99, 16.78 million in '98). In 1998 and 1997, weather disasters in the fall, including hurricanes in Latin America, increased demand and prices for the limited amounts of

North American beans. Producers responded with increased plantings.

There are substantially larger bean crops in most major producing areas, including Canada, the US, Brazil, China, and Mexico. Myanmar (Burma) grew less than 1/2 million tonnes of beans before '92/93, but is now a major exporter. Myanmar's 2000/01 bean crop is put at about 1.23 million tonnes, with another 770,000 tonnes of other pulses (1.15 million tonnes of beans in '99, 1.08 in '98/99). With a new export program, Myanmar's bean and other pulse exports are expected to reach 750,000 tonnes in 2001. India's crop is large and similar to '99/00 at a preliminary 4.55 million (3.0 in '98/99). Brazil produced about 3.10 million tonnes and together, Brazil and Argentina have bean crops totalling about 3.4 million tonnes (3.1 in '99/98. 2.5 in '98/99). China's crop is estimated to be larger at about 1.9 million (1.7 in '99/00, 1.6 in '98/99).

US bean production was down 20% in '2000. Plantings were reduced to 1.76 million acres, from just over 2 million acres in 1999 and 1998. Yields were down 7% to 1,646 pound/acre. Production totalled 1.20 million tonnes or 26.44 million cwt. (1.50 million tonnes in '99, 1.38 million in for '98/99). The 2000 US dry bean crop was: 18% navy, 40% pintos, 9% kidneys, 5% blacks, 5% garbanzos (chickpeas), 1% pinks, and 1% small reds. The US exports roughly 15-25% of their crop. US bean exports in 1998 and 1990 were close to 500,000 tonnes, dropping back to 388,510 tonnes in 1999, but for much of the 1990's was closer to 360-370,000 tonnes.

Mexico's 2000/01 bean crop is expected to be 7% larger at 1.16 million tonnes, despite dry conditions from the southern US into northern Mexico that persisted into late 2000. (The two seasonal crops in '99/00 totaled 1.08 million, 1.26 in '98/99, 965,056 in '97.) In 99/00, Mexico had severe late-summer drought in 2 northern states, Zacatecas and Durango, and late-fall flooding in the southeastern state of Velacruz, losing a portion of Mexico's rice crop. Zacatecas generally produces about 30% of Mexico's bean crop, mainly light-coloured beans (Flor de Mayo and Flor de Junio), and is Mexico's largest black bean producer. Durango accounts for about 10-12% of the country's beans. Chihuahua is the major pinto grower.

The USDA credits a generous and rising NAFTA tariff-rate quota with an expanding bean market into Mexico and is looking for steadily increased imports by Mexico in coming years. Canada was not able to obtain an agreement to increase its regular quotas. Import quotas grow, however, at 3%/year compounded over the 15 years from January 1, 1994. The US initial quota has grown from 50,000 tonnes in 1994 to 59,703 tonnes in 2000, 61,494 in 2001. Canada's quota grew from 1,500 to 1,791 tonnes in 2000, 1,845 in 2001. Mexico, however, has the option of emergency, over-quota purchases, which Canada can fill. Although Mexico has not been applying them, the over-quota tariffs on beans started at US$480/tonne, and will take 15 years to phase-out. Mexico recently authorised imports or "cupos" in 2001, over NAFTA-quota amounts, without collecting over-quota tariffs (commodities included wheat, corn, soybeans, barley, malt and dry beans), quantities to be determined by the Ag. Department.

Mexico's bean imports have been somewhat disappointing over the past 2-3 years. Imports were down sharply in the 1999 calendar year to 128,028 tonnes, a continuation of the volatility and variation of previous years (202,000 tonnes in '98, 90,161 in '97, 130,780 in '96, 26,962 in '95, in comparison to the high of 330,471 in '90). (Mexico's bean imports in July/June '97/98 were 140,000T, down to 56,000T in 98/99.) Mexico's current method of holding infrequent auctions to allocate import certificates has caused considerable market confusion, and not infrequent price pressure. In January, 1999, Mexico chose to delay the auction of import certificates for calendar-year/99 trade, and that prevented most US dry bean movement into Mexico during Jan/July/99, creating a "drag" on US pinto and black bean markets. Mexico is reportedly attempting to halt "smuggling" of illegally imported dry beans, perhaps partly caused by slow processing of imports

under the current tariff-rate quotas (TRQ). Mexico's Agriculture Department (SAGAR) now controls imports and is attempting to encourage domestic production. (CONASUPO, the state buying agency, was disbanded in 1999.)

The 2000/01 Canadian bean crop is pegged at a total of 261,400 tonnes, 119,300 tonnes of white beans, 142,100 tonnes of coloured beans, down only slightly from last year's record 284,500 tonnes (185,100 in '98, 160,500 in '97). Manitoba's bean area increased to 120,000 harvested acres according to Statistics Canada's surveys, 140,000 acres according the Ontario Bean Producers. Manitoba's production included 74,800 tonnes of white or navy beans, and 72,600 tonnes of coloured beans, a total of 147,400 tonnes (121,600 in '99, 72,100 in '98), according to Statistics Canada. Ontario's white/navy bean crop was only 32,000 tonnes, with another 24,000 tonnes of coloured beans (67,100 and 38,600 in the low-priced, "bumper year", 1999).

White Beans:

Supplies are still good despite reduced production, but markets were slow in early 2000/01. Combined production in Canada and the US (Michigan, Minnesota and North Dakota) is down about 25%. There were carryovers in the US and Canada from the higher production levels of 1999. About 46% of Canada's bean crop was white pea or navy beans (119,300 tonnes, 149,100 in '99, 73.9 in '98). Manitoba grew about 63% of the Canadian crop in 2000. Manitoba's white pea bean area increased to 125,000 acres seeded, 120,000 harvested according to Statistics Canada's surveys (140,000 acres according the Ontario Bean Producers), with production estimated at 74,800 tonnes by STC (87,000 tonnes by OBP). With the high humidity in 2000, there was some incident of anthracnose reported in southern Manitoba. Ontario had reduced its plantings to 52,000 acres (85,000 in '99, 35,000 in '98). Ontario yields were also a low 1200 pounds/acre because of wet weather, dropping the crop to 28,500 tonnes (70,100 tonnes in '99).

US white bean production in 2000 was down 26% to 332,210 tonnes. (Production in 1999 was an extremely large 447,930 tonnes.) In 2000, pea or navy beans were down 35% to 216,410 tonnes, Great Northerns were up 1% to 112,900 tonnes, and small whites were halved to 2,900 tonnes. Argentina Alubia crop (similar to Great Northerns) had been reduced by wet weather in 1999, and may not be much larger in 2000. Although white or light in colour, the larger white beans, like Great Northerns, are often classed as "coloured".

Price:

Prices have dropped since the 1998/99 rebound. Post-harvest prices for 2000-crop, #1 Navy beans in Manitoba were in the 16.5-18 cents/pound area, compared to some spring contracts in the 21-22 cent area. Very early contracts for a portion of 1999-crop white pea or Navy beans were 24-28 cents/pound, but by mid to late-November '99, the cash bid price to the producer had dropped to the 20-22 cent area (26-29 in Nov/98, 17-17.5 in '97, 25-28 cents in'96). There was a small amount of Great Northerns grown in Manitoba in 2000 and in 1999 (and some brought in from North Dakota), with a base price to the farmer of 24-30 cents (22-28 cents a year ago). In Manitoba, pre-planting contracts for 2001/02 white pea or Navy beans appear to be in the 18 cent/pound area.

Coloured Beans:

Western Canada's coloured bean crop is larger in 2000, at 142,100 tonnes (135,400 in '99, 111,200 in '98). Manitoba grew about 51% of the Canadian crop, or 72,600 tonnes (49,000 in '99)

beans, with the rest grown in Alberta. Manitoba's plantings were about 50% Pintos, 20% Blacks, 13% Kidneys, about 5% Cranberry beans, and about 6% small Reds.

US coloured bean production was down. The USDA surprised Pinto markets with a late-season increase in the crop estimate to 483,000 tonnes, 2% below '99, 26% below '98. US pink beans dropped to 14,560 tonnes, about a third of the previous 2 years. US kidney beans are down 2% to 107,550 tonnes (light kidneys comprise close to 60% of US kidney production). US cranberry beans were down 22% to 20,500 tonnes, with small reds at 14,200 tonnes, at 1/3 of '99, ½ of '98. The US Black bean crop was smaller than expected, dropping to 60,830 tonnes in 2000, with the estimate decreasing through the fall estimates; the 2000 crop is only 40% of the 1999 crop, 38% of the 1998 crop, although carry-in was reportedly large.

Argentina grows little more than 300,000-320,000 tonnes of beans, but had a larger black bean crop in '99/2000, and potentially similar amounts for 2000/01. Mexico's bean production has tended to be most drought-affected for black and some light beans, least for pintos in recent years, but black beans are expected to be larger along with other beans. Last year, Mexico's SAGAR had been requesting Chihuahua growers to offset some of the northern losses by planting blacks and Flor de Mayos for the summer harvest. Mexico's consumption preferences are for brown and pintos in the north, Flor de Mayo and Canario in central areas, blacks in the south. In general, Canadian and US coloured bean exports tend to go into Latin America, with Pintos and Reds often into the Mexican market, Browns and white pea or navys to Europe.

Price:

US prices are holding at low levels. In Argentina black bean prices reportedly hit historic lows a year ago, with little improvement since. After the short 1999 crop, Mexico's farm prices improved 25% after harvest start-up in Zacatecas, with Flor de Mayo and Flor de Junio beans about US21-27¢/lb, and with black beans US28-33¢/lb by late-October/early-November, 1999!

Manitoba producer prices, non-contract or spot prices, on #1 pinto beans were 17-18cents after harvest, slipping to 16cent by late-2000 (17-21 in 'Nov/Dec/99, 23.3-27 in '98, 20-24 in '97, 25-28 in '96). Small reds (Mexican or Adzukis) were 16-17, rising to 22 cents in late-2000 (21.3-28 cents in '99, 34-39 in '98). Black beans were 16-18 cents, rising to the upper end late in 2000 (19-22 in Nov/Dec/99, 39-45 in '98, 23-30 in '97, 26-27 in '96). Manitoba cranberry beans were 23-30, slipping a bit into December (20-25 in Nov/Dec/99, 34-39 in '98). The few had pinks were 13.5-21 cents (16-22 in '99, 29-30 in '98, 25-28 in '97,35-36 in '96). Brown (Dutch) beans were not quoted, but were about 20 cents in Nov/Dec/99, 29 in '98, 19 in '97, 33-35 in '96. Light red kidney beans 25-29 (25-31 in '99), dark reds 25-29 (27-33 in '99, 40-42 in '98, 27-28 in '97, 32-45 in '96).

Most bean contracts will be offered beginning January/February. In 1998, there were unusually early, pre-Christmas contract offers on a portion of 1999 production (with prices around the 30cent level for most coloureds.) With the increased supplies over the past 2 years, prices have declined. Manitoba contract offerings for 2001/01 appear likely to be close to current spot levels, with early offerings around 20 cents for navy, 18 cents for pinto and blacks.

Chickpeas or Garbanzo beans:

World chickpea production is estimated at about 9.39 million tonnes in 2000/01, up only 1% after the dramatic increase in '99/2000 to about 9.34 million (8.78 in '98/99), according to the FAO, although not all crops have yet been harvested. In '98/99, post-El Nino weather and tropical

storms and hurricanes cut pulse crop production outside N. America, forcing some demand, particularly in the middle East to shift from chickpeas to yellow peas. Much of the chickpeas and dry peas used outside N. America and Europe are ground into flour.

Although Canada, the US, and Australia have larger crops, demand is strong from some of the major consuming areas. Chickpeas have benefited from the increased European demand for vegetable protein feed substitutes. World trade in chickpeas was estimated at 407,105 tonnes in calendar year 1999 (452,680 in '98, and a high of 758,510 in '97). The largest chickpea exporters tend to be Turkey and Australia (160,000-165,000 tonnes/year), Mexico (about 80,000 tonnes) and Syria (about 30,000 tonnes). The major importers have been India (about 150,000 tonnes) and Pakistan (about 75,000), followed by Spain and Bangladesh.

There are two main types of chickpeas, the smaller, lower-priced Desi (85-90% of world production), and the larger, higher-priced, Kabuli or garbanzo beans (10-15%). Most producers, including Canada (Saskatchewan) and India grow some of both types.

Desi varieties are small-seeded, irregular and wrinkled, white or coloured (green, purple, brown or black), shorter-season (95-105 days to maturity), may be substituted for green or yellow peas, split, generally milled into flour, made into noodles, cooked, mashed, roasted, sugar-coated, etc. Desis are produced mainly in India, Pakistan, Burma, Bangladesh and Australia, as well as some in Canada.

Kabuli varieties are large-seeded, cream to white, longer-season (100-110 days to maturity). Larger Kabulis are used as a vegetable, in soups, or salads. Smaller or damaged Kabulis may be ground into flour. While some western bean processors may use electric sorting methods, hand-sorting or sieving is used elsewhere. Kabuli varieties are produced in Turkey, Syria, Iran, Mexico, Ethiopia, the US and Canada.

India grows 60-70% of the world crop. India's crop was a total of about 6.44 million tonnes in 1995 and, after production declines, is back up to around 6.7 million tonnes in '00/02 and '99/00 India, however, has an increasing deficit in per capita pulse crop rations. Australia grows desi type chick peas for export to India. Australia's crop is put at a preliminary 198,800 tonnes (harvest is in January), although the drought may have reduced it further (up from 187,000 tonnes in '99/00 when there was Oct/Nov frost and aschochyta, and 160,000 tonnes in '98/99). Turkey's crops have been around 600,000 tonnes for the past 3 years (720,000 tonnes in '97), so carryovers and exportable surpluses (no more than 100,000 tonnes) are expected to be lower. Mexico's crop is estimated at 211,295 tonnes in both 2000 and '99, although there was poor weather at planting and considerable reseeding reported in Kabulis in the fall (98,469 in '98, 243,712 in '97).

The US quadrupled their garbanzo or chickpea acreage over the past three years, increasing to 112,700 acres planted in 2000 (58,500 in '99, 28,500 in '98). The crop is grown mainly in California, Idaho, Montana and N. Dakota, with some in Washington state and Oregon. The US crop in 2000 was not as large as the early-season estimates, but still up nearly 80% from '99 to a total of about 59,650 tonnes or 1,315 cwt (33,340 tonnes in '99, 18,960 in '98).

Canada's chickpea production is almost entirely in Saskatchewan. Planting in Manitoba can be hampered by a late, wet spring, such as in 2000 and 1999, resulting in few fields planted in Manitoba. The Canadian crop is estimated at about 370,000 tonnes in 2000 (325,000 tonnes in '99, 50,000 in '98, 15,000 in '97,11,500 in '96). Saskatchewan planted 680,000 (350,000 in '99), harvested 650,000 (325,000). The 2000 yield was 1257 pounds/acre (1270 in '99). In 1999 nearly 60% of the planted area was to larger Kabuli varieties in '99 and '98 (250,000 and100,000 in '99, 55,000 and 40,000 in '98). Saskatchewan's production has increased from 14,500 tonnes in 1997, while plantings have increased from 70 acres in '94 (95,000 in '98, 26,000 in '97).

Price:

Saskatchewan's largest (10mm) Kabuli chickpeas were as much as 45 cents/pound in the fall of 2000, with smaller Kabulis (9mm) at 35-36 cents (36-37 cents/pound a year ago. The Smaller Desi were priced about one-third that or 12-13 cents, about the same as in '99. Some run-up in price can occur in the fall prior to fall shipping deadlines to Muslim countries. (In contrast to the current situation, in 1998, most of the crop was priced for seed.)

Outlook:

High prices the previous year or two encouraged increased production in 1999 and 2000. Prices improved in the late fall, along with other pulse crops, in response to news of a European ban on meat and bonemeal. Chickpea carryovers should be low by the end of 2000/01, with demand for alternative protein sources expected to remain strong into the new crop year, although prices may not be substantially different from current cash values. US and Canadian production may be somewhat larger, assuming reasonably good spring planting weather.

BUCKWHEAT:

World buckwheat production is estimated to be up 14% in 2000 to 2.718 million tonnes, the highest level in 3 years (2.38 million in '99, 2.5 in '98), according to FAO estimates. All the world's largest producers increased production dramatically. World trade in buckwheat rose to a high of 245,810 tonnes in the 1996 calendar year, a year of lower production everywhere but in Canada. With larger crops in recent years, international trade scaled back to about 167,475 tonnes during the calendar year 1999 (197,480 for '98, 213,911 in '99). Japan and Europe are the major importers, with China the largest exporter. Production in Brazil has been nearly eliminated in recent years.

China, with an estimated 60% of the world crop in 2000, produced about 1.6 million tonnes (1.3 million in '99, 1.4 in '98). China's exports have grown from 21-22,000 tonnes in 1980 to a steady level averaging 105,000 tonnes/year, 1995-1999, and a maximum of 122,530 tonnes in 1993. Buyers indicate that China has become more competitive (price and/or quality) in recent years. China produces large amounts of both sweet and bitter (tataricum) varieties of buckwheat, (bitter varieties have some yield advantage at higher altitudes), which may have been one source of earlier buyer dissatisfaction. (Only sweet varieties are grown commercially in N. America and Europe.) China's buckwheat research program apparently terminated in 1995.

Japan produces 18-24,000 tonnes of buckwheat domestically (about 22,000 the past two years, 17,900 in '98), and has on occasion contracted for foreign production, particularly in the US northwest for production of specific varieties. Japan is a fairly steady importer of buckwheat, importing an average of 100,000 tonnes of buckwheat over the 5 years, 1995-1999, 50-60% of the world trade. Japan buys only fresh, new-crop for use in fresh soba noodles, from all the major competitors, including China, Canada, the US, Brazil, and France (with the exception, perhaps, of Eastern Europe).

The Russian Federation, with 23% of the world crop, produced a 7% larger crop of 620,000 tonnes (578,800 in '99, 465,940 in '98). The EU-15 grew 24,000 tonnes (22,316 in '99, 25,593 in '98). The EU imported 29,000-36,200 tonnes of buckwheat during 1995-1999 (and exported 9,000-11,800). France generally has an import demand for use in buckwheat crepes (in Brittany).

US production is put at 65,000 tonnes (63,000 in '99, 80,000 in '98 and '97). Planting is generally in the 30-40,000 acre range. The Minn-Dak Growers Ltd. tends to contract for about 30,000 acres of production in North and South Dakota, Minnesota and Montana. In August, 1997, the Minn-Dak Growers Ltd, of Grand Forks, N.D. officially opened a mill in Grand Forks specifically for buckwheat milling. The products, light and dark buckwheat flours, groats, and grits, are destined for the North American market. Minn-Dak's Dickinson, N.D. plant cleans raw buckwheat for export to Japan. (Minn-Dak also processes birdseed, using oil sunseed, safflower, and millet, at its Dickinson plant, processes confectionery sunseed at Donaldson, Minn. and Drayton N.D., and mills and deheats mustard at its Grand Forks plant.) Buckwheat, which is popular with deer, may also have marketing potential in winter deer feeding programs.

Manitoba's buckwheat production was 13% higher in 2000 (9,800 tonnes, vs 8,700 in '99, 10,900 in '98). Much of the balance of Canadian buckwheat production is in Quebec, bringing the total Canadian crop to 13,600 tonnes (12,500 in '99, 14,800 tonnes in '98).

Canada exported approximately 6,700 tonnes of tonnes of buckwheat in the calendar year 2000, close to the 7,070 of '99 (compared to the high of 13,860 in '97). About 60% may go Japan, the balance often split to the US and the EU (often the Netherlands).

In recent years, Canada and the US have been importing pillows made of buckwheat hulls, mainly from Japan. As a result, there has been a surge in the local interest in buckwheat hulls (2-sides attached) for pillow production. In much of the milling processes, however, the hulls may be rendered unusable by being either spit apart totally or ground with the fruit. The primary supplier of clean, weed-free, good-quality hulls to Canada and the US has been Russia. China also exports buckwheat hulls to the US, some of which has been imported into Canada in pillows. To meet the demand, some of Manitoba's bulk food stores began to carry the hulls in late 1997. The US co-op also began to supply hulls. A Minnesota processor's sales value of approximately US$0.60/pound for hulls was reported in the early spring, 1998.

Buckwheat is a broadleaf crop in the same plant family as rhubarb. The seed is about 11% protein, 2.5% fat, contains high-quality protein or lysine, and rutin, contains no gluten, and apparently has pharmaceutical and nutraceutical product potential, including beneficial effects on cholesterol. It may be used whole in soups, stews, or Kasha (washing the seed before cooking removes any residual bitterness). It may also be used in groat form for breakfast cereals, ground for crepes, or mixed with wheat flour in bread, pancakes or noodles.

The US Buckwheat Growers Association of Central Minnesota and their newly formed growers' co-op are also focusing on buckwheat as a rotation crop or a conservation crop for CRP land. As a cost-effective alternative to chemicals, it is being used alone or followed by other crops (e.g. rye, vetch), as a cover crop, for smothering weeds (fairly competitive with quack grass), or as a green manure crop (also in rotation with organic soybeans). Buckwheat can potentially add as much of 3000 pounds of organic matter per acre. It is a short-season crop, not particularly frost-tolerant, and not yet eligible for crop insurance in the US. Variety research for frost-hardiness, yields, etc. is ongoing in Morden, Manitoba. US yields of buckwheat are generally 800-1000 pounds/acre (17-21 bushels/acre), but they are hoping to add another 200 pounds/acre through research.

Price:

Late-winter contracts for upcoming buckwheat crops have tended to be in the $7-8/bushel. Contracts are generally 15 bushels/acre, close to the average provincial yield of around 15 bushels/acre in 2000 (16 bushels in '99), although yields may be higher for individual producers,

particularly on earlier plantings. Prices to the Manitoba producer for 2000-crop buckwheat dropped under $7/bushel after the fall harvest to about $6.50-6.75/bushel. (In 1999, prices had started at $6.75 early in the fall, falling to $6/bushel, with $7.50-$8/bushel in Nov/98, $6-7/bushel in Nov/97.) Lower-grades have tended to be $4.50-5.50/bushel for use in birdfeed ($5.50 in '99, $6.75 in '98, $7 in '97).

Outlook:

In addition to the large world crops, China continues to hold much of the lucrative Japanese market, holding world prices down. The increase in North American demand for milled buckwheat is expected to continue to hold prices in the $7-8 benchmark area for 2000/01.

CANARYSEED

World canaryseed production is down slightly in 2000/01, to around 219,570 tonnes, according to FAO estimates, well below the high of 347,710 in '96 (228,570 in '99, 301,515 in '98). With foreign production dropping off over recent years, Canada has become the major world producer and exporter. Australia currently grows about 3,000 tonnes per year, the US little or none. Mexico grew about 628 tonnes in '97, about 800 tonnes per year '98-2000. Canary seed is a major ingredient in birdseed mixes for caged and wild birds. Latin America, and Mexico in particular, has a high rate of consumption, which should increase as disposable income rises.

Canadian canaryseed production has ranged widely from 115,000 tonnes (in '97) to 284,600 ('96), and the crop has tended to be in very regular oversupply over the past few years. It continues to fill a major role as a rotation crop in Saskatchewan, however. Canada's 2000 crop totalled 170,800 tonnes (166,000 in ' 99, 235,300-'98). Manitoba's crop totalled 17,200 tonnes (7,600 tonnes in '99, 24,900 in '98). The balance is grown in Saskatchewan, which tends to carry over large stocks.

Canada exported a total of approximately 129,000 tonnes of canaryseed during the 2000 calendar year (145,045 in 1999, 127,430 in '98). The largest buyers tend to include Belgium, the Netherlands, Mexico, Brazil, and the US, with large amounts also going to Spain and other EU countries. Mexico's 20% tariff on imports of Canadian canaryseed expired January 1, 1998, and Canadian canaryseed exports to should continue to grow. Manitoba exports much of its crop to the US, Europe and Mexico, but imports large amounts of cleaned birdseed. In 1998, exports were valued at $12.6 million and imports at C$83.3 million.

Prices:

Western Canadian and Manitoba canaryseed prices generally continued in the 10-11 cents/pound area, although there were reports of up to 11-12 in the fall (11-12 cents in late '98, 14-16 cents -'97, 12-15 -'96). The large carryovers have tended to result in some higher bids only when necessary to draw out supplies.

Outlook:

Prices for 2000/01 are likely to remain flat unless further drawdowns in production and carryovers occur, particularly in Saskatchewan.

FABABEANS

World dry faba bean production is estimated by the FAO at 3.839 million tonnes, a 14% increase from '99 (3.37 in '99, 3.63 in '98). Production was up in most of the major producing areas. China and Australia produced and export fairly large amounts of faba beans. The Mid-East buys sizeable amounts, particularly from Australia and China.

China grows approximately 55% of the world crop, and its production is estimated to be up 13% in 2000, to about 2.1 million tonnes (1.86 in '99, 1.832 in '98). The EU-15 grew in excess of 270,000 tonnes over the past few years, increasing to 274,800 tonnes in 2000. Australia's crop is estimated to be a record of about 188,000 tonnes (166,000 in '99, 133,000 in '98). The US appears to grow little or no fabas as a dry bean, although California and New York states grow most of the US fabas as a green or vegetable crop, with harvest in the spring.

Dry fabas are considered to be a major winter crop for human consumption in the Mid-East. The Mid-East and its neighbouring areas, north and south, have been in varying stages of recovery from a severe 2-year drought in late-2000, early-2001. Egypt grew 470,000 tonnes (307,100 in '99, 523,100 in '98), Morocco may have about 100,000 tonnes (double last year's 55,450), Turkey about 46,000 tonnes (little changed over the past 5 years), and Libya about 12,000 tonnes, with smaller amounts in a number of other nearby countries. Ethiopia, generally a N. African bean exporter, grew about 280,000 tonnes (285,200 in '99, 338,850 in '98).

The 2000 Canadian fababean crop is estimated at 15,400 tonnes (6,500 in '99, 13,700 in '98, 4,300 in '97). Manitoba is the only province for which Statistics Canada shows fababean production in very recent years. Quality was reported reasonably good in 1999 and 2000. Fabas may be used for food or hog fodder and as an alternative when quality suffers, as in 1997, in competition with alternative protein feeds.

The Faba bean (*Vicia faba* L.) is a legume with a number of alternate names, including Fava, Broad bean, Horse bean, Windsorbean, Tickbean (small types), Bakela (Ethopia), Boby kurmouvje (former USSR), Faveira (Portugal) Ful masri (Sudan) Feve (France) and Yeshil Bakla (Turkey). Fabas may be used fresh, green, dried, or canned. Large varieties may be eaten fresh, as a vegetable. Like lima beans, pods are edible when young and immature but, while cooked fabas generally pose no problems, raw fabas can provoke varying degrees of allergic reaction severity in some people. Fabas are apparently used as a breakfast food in the North Africa and Mediterranean areas and in China. They may be stewed (Medamis), used as a paste and/or deep fried (Falafel), in soup (Nabet), roasted like peanuts (India), or used as a meat or milk substitute, according to the Purdue Hort. Guide. Faba bean has been considered as a meat extender or substitute and as a skim-milk substitute. Internationally, fabas are used as animal feed (hogs, horses, poultry and pigeons), as green manure or high-protein feed, with the straw used for brick making or as a fuel.

Price:

International faba prices rose in the fall, then fell in December, along with many other crops, partly in response to the EU feed ban. The Australian Barley Board, which markets "Fiesta" faba beans, on a pooling or cash basis, expects the declining price to result in a return to producers of A15 cents/pound (A$320-$330/T) in the late-2000 pool, compared to A13 cents ($280-$290) for an early-2001 pool.

In Manitoba, November to December prices for good fababeans were in the 8.5-9 cent/pound area (8-10 in '99, 9-10 in '98, 12 cents for good #2 -97'). Feed grade fabas may market around 5-6 cents in a low price year like this, to 7-8 cents in a higher-priced year.

Outlook:

Faba prices seem to have a base price in the 9-10 cent area ($220/tonne). Next crop-year's prices will continue to be restrained by high US grain and protein crop supplies, and by potentially larger world bean and chickpea plantings.

LENTILS

In the past 2 years, '99/2000 and 2000/01, world lentil supplies have been boosted by production increases in major exporting regions. Global production is expected to be up slightly to about 3.23 million tonnes in 2000, according to the FAO (3.15 million in '99/00, 2.90-'98/99, 2.68-'97). Weather disasters in late-'98 and '97, and a N. African drought that persisted into late-2000, helped to increase lentil demand and draw down supplies. World trade rose to 865,250 tonnes in 1999 (compared to less than 600,000 tonnes in the early 1990's). About 20% of the world trade has been shipped to Africa over the past few years, 176,270 tonnes in 1999, much as food aid.

A pulse crop, lentils are a major ethnic foodstuff of the mid-East. The FAO is estimating Morocco's lentil crop at about 13,000 tonnes in both 2000 and 1999 (24,840-'98/99, 26,720-'98/99). Morocco's production in the last decade has been volatile from 8,130 tonnes in '95/96 to 51,150 in '91/92. Morocco, a major producer, but subject to drought, imported 19,850 tonnes in 1999 (10-20,000 tonnes in most recent years, up from 700 tonnes in 1992). North Africa's 2-year drought cut production in the region, and increased demand from some of Morocco's neighbours. Turkey imported 65-81,000 tonnes over the 1997-99 period, Algeria 44-58,000 tonnes, and Saudia Arabia 14-19,000 tonnes.

The EU crop is substantially larger in 2000 (31,268 tonnes, 18,310 in '99, 23,610 in '98). The European crop size affects their buying, and US and Canadian prices. In the past, European buyers have tended to stockpile imported lentils in low-price years, and reduce imports in higher-prices years. In recent years, the EU has imported about 20% of the world's lentil trade, 162,540-230,870 tonnes from all sources, with 173,118 tonnes imported in 1999.

Australia's lentil production continues high in 2000/01 (110,000 tonnes in '99, 103,000 in '99, 46,000 in '98, 36,000 in '97). Australia has become a commercial producer and exporter of small red lentils, which is used like a vegetable side dish in countries like India, although there have been foreign concerns over the difficulty in visibly distinguishing Australian vetch seed.

The 2000 US lentil crop is a bit larger than expected, at a 27% increase to 137,395 tonnes (108,270 in '99, 87,907 in '98, 109,135 in '97, 60,464 in '96). US lentils are grown in only 4 states, N. Dakota and the north-western states of Washington, Idaho and Montana. Total plantings were up 19% to 217,000 acres (182,000 in '99), with 15-21% of the area grown in N. Dakota. Lentils are used, along with other pulses, in government food aid.

The Canadian lentil crop was up 26% to 914,1000 tonnes (723,800 in '99, 479,700 in '98, 378,700 in '97), most of that produced in Saskatchewan, but in addition, carryover estimates were higher than most expected. Manitoba's grows few lentils, although the crop doubled to 16,100 tonnes in 2000 (8,800 in '99, 5,900 in '98, 5,300 in '97, 21,000in'96). In recent years, Canada has supplied 45-50% of the world's lentil trade. Canada's exports of lentils reached 391,740 tonnes in the first 10 months of 2000, (compared to 416,680 tonnes in '99, 374,086 tonnes in '98)

Price:

Lentil prices in 2000/01 have been below previous year levels, with some additional slippage in late-2000. US selling prices at the dealer were around 14-14.50 cents/pound in late-2000, early-2001 (US16-17cents in Nov/Dec/99, 14.75-15.00 in '98 and '97, 20.25-21 cents in 1996). US grower prices were down close to the '98 level at 10.75-11 in late-2000 (US13-13.25 cents in '99, 11.50 in '98, 17-17.50 in '97).

In Manitoba, lentil prices to the producer late-November, early- December 2000 were in the 14.5-17.5 area for #1 Estons (19-23 cents in Nov/Dec/99, 18-20 in '98, 12-14 in '97, 12.5-14 in '96). Manitoba Lairds were 14.5-17.5 (21.5-22.5 in '99, 17.25-19 in '98, 13.25-14.5 in '97, 19.25-21.5 in '96). Speckleds were 12.5-14.5 cents (17-20 cents in '99, 14.5-15.5 in '98, 11.45-12 in '97, 12-12.7 in '96). Richleas were around 14-16 cents (19.5 in '99, 15.75-16.5 in '98, 13.05 in '97, 18 in '96). Small Crimsons or Reds, mainly grown in Saskatchewan, but with a few reported in Manitoba in '99, were about 15.5-17cents/pound in Saskatchewan (18.2-20 cents in '99, 21-25 in '98). Feed grade lentil prices tend to be extremely low, potentially 3-4 cents/pound.

Outlook:

Morocco's drought appears to have ended and soil moisture improved in late-2000; as a result Morocco's lentil production could be increased substantially in 2001. The current higher price levels are likely to encourage higher plantings in the EU and the US and reduce on-farm stocks. Saskatchewan produces the bulk of the Canadian crop and is likely to maintain a high level of planting, if spring weather permits.

MILLET

Manitoba grew about 30,000 acres of millet, according to the 1991 Census (with no numbers out of the 1996 Census). Canada exported about 2,460 tonnes of millet during 1997 (2,213 in '97, 1,103 -'96). In 2000, the US grew about 166,010 tonnes of proso millet, well below the 406,190 tonnes of 1999, the first year of USDA estimates. The US proso millet area dropped to about 440,000 acres planted in 2000 (600,000 in '99), with an estimated 370,000 harvested (540,000). US supplies apparently became tight in the fall.

Millet appears to have found a niche market as a low-gluten food, and as a rice substitute in Asian recipes. For food grade, the millet must be free of inseparable impurities, including wild varieties. In the past, much of the millet grown has tended to be for forage production. Little has generally been harvested as seed, particularly since some varieties are very susceptible to contamination from wild foxtail millet. Tame millet seed and millet sprays, however, are a major feed component for caged birds, particularly smaller hook-bills and canaries.

Price:

Much of Manitoba's millet production appears to have been contracted in 2000. The November/December 2000 price paid to Manitoba producers for Red and white millets was about 13.5-14 cents/pound clean, 7.5-8 cents unclean (compared to 10 cents/pound clean, 8 cents unclean in late '99). Red and White millet prices appear to be very similar this year. In the late-fall, early-winter of '98/99, Red Proso millet was in the 8.2-8.25 cents/pound area (10.5cents in '97), with White Proso about 8 cents (7.2), Crown millet about 7 cents (5), Red Siberian about 11 cents (14.5), with Prairie Gold about 6 cents in '97.

MUSTARDSEED

Global mustardseed production in 2000/01 may be close to 516,900 tonnes (615,140 in '99/00, 530,300 in '98/99, 508,340-'97), after adjusting the 624,000 tonne preliminary FAO estimate for the lower N. American crops. Nepal alone grew about 122,700 tonnes in 2000 (119,730 in '99)! The Russian Federation grew about 75,000 tonnes in 2000 (70,000 in '99), a steady increase from 46,300 in 1995, with another 67,230 in other FSU countries (12,000 tonnes in Romania, 4800 in Slovakia, 1000 in Lithuania, 4500 in Kazakhstan, 44,930 in the Czech Republic). China grows about 12,000 tonnes, Australia about 200 tonnes. The EU grew about 5,920 tonnes (5-6,000 tonnes over the past 3 years, 8,230 tonnes in '97). There are no separate mustard production statistics for much of Asia, including India, Pakistan, and Bangladesh, since they prefer the spicier taste that mustard/rapeseed oil blends provide, rather than growing mustardseed separately for condiment or other oil and protein use.

Mustardseed production in N. America declined, although supplies appear to be still high following the increases that occurred in 1997 and 1998, and US users and dealers appear to have holdings from previous crop(s). US production dropped to 24% to 16,590 tonnes in 2000 (21,780 tonnes in' 99, 37,080 in '98, 26,950 in '97). US plantings dropped to 46,000 seeded acres, 42,900 harvested (60,800 acres seeded in '99, a high of 98,900 in '98, 76,300 in'97). US planting earlier in the 1990's had ranged from 15,300 (in 1992) to 19,400 (1991).

Canada's grows 40-50% of the world's mustardseed! Canada's 2000 crop dropped 34% to 202,200 tonnes (306,400 in '99, 238,600-'98 243,300-'97, 230,800-'96). Most of the crop is grown in Saskatchewan, and what was grown in southern Alberta (including browns) was affected by the dryness. Manitoba grew only 3,300 tonnes in 2000 (1,900 in '99, 3,400-'98, 6,300-'97), virtually all of which is yellow. Crop quality appears to be a problem in some areas of western Canada, with cleanliness (inseparable seeds, wild mustard and canola) an issue. (The industry recommends that tame mustardseed plantings follow canola only after 5 years.) Canada's mustardseed exports have declined since the 167,900 tonnes of 1998, dropping to 135,065 tonnes in '99 and to 105,540 in the first 10 months of 2000. The US tends to account for nearly 60% of Manitoba's mustardseed exports, with small amounts to Japan, and the rest to the EU. (Some 30,150 tonnes of mustardseed exports in 1999 were from or through Manitoba),

The nearby mustard milling industry has grown in recent years. Some is processed into edible mustard preparations in Manitoba. Local cleaning plants separate and clean seed to processor specifications. The Crystal River Foods plant in Clearwater, Manitoba, markets organic, wild mustardseed. Some milling is currently done in eastern Canada in Hamilton or Montreal, with much of the flour exported to the US or overseas. The Sakai Spice Canada Manufacturing plant in Lethbridge, Alberta, mills for the Japanese market. There are mills in N. Dakota and Missouri. The US Minn-Dak Growers Ltd. mills and deheats mustard at its Grand Forks plant.

Mustardseed has a reasonably high protein level and can be used as a filler or emulsifier for meats, as well as a condiment. Recent research points to potential uses for meal components as emulsifiers in non-meat products. Mustardseed also has a high oil content of approximately 27% for yellow and 38-39% for the brown and oriental types. In Asia, the spicier mustards are valued as a flavouring for vegetable oils, especially with rapeseed. (Some mustardseed millers reportedly tend to buy by variety as well as by type.)

Price:

High mustardseed carryovers and the overhanging effects of the US loan program have been restraining prices. Cash mustardseed prices improved after the harvest, when both US and Canadian crops proved smaller than most expected. Mustardseed prices to the Manitoba farmer are improved in 2000, but still well below '96/97's highs. In 2000/01, late-November, early December prices to Manitoba producers for #1 yellow mustardseed were 14.5-16 cents/pound (11-12 cents in Nov/Dec/99, 16-18 in '98, 18-22 in '97, a high of 47 in '96). Producer prices for brown (grown mainly in Saskatchewan) were around 10.5-13 cents after harvest (12 cents in '99, 16-17.25 in '98, 17-18 in '97, 18.5-20 in '96). Oriental mustardseed was about 10.2-12 cents.

US mustardseed is considered a "minor" oilseed and is eligible for a national loan rate of US$9.30/cwt and for a Loan Deficiency Payment when market prices fall below the loan. At the N.D. county level, the loan rate becomes US$9.11 to 9.30/cwt (the equivalent of C13.4-13.7cents/pound or C$301.40/tonne).

Outlook:

Canadian and US mustardseed carryovers are likely to be reduced to some extent during the current crop year, which will likely encourage higher plantings in 2001/02, particularly for Alberta and Saskatchewan Brown and Orientals, but also for western Canadian and US yellows. US farmers have an established co-op processor, for which they will continue to grow. Rapeseed plantings are expected to remain low in most areas of the world. India, however, will likely encourage rapeseed and oil mustard production, weather permitting, to reduce high levels of vegetable oil imports. US supports will continue to have a price-limiting effect on mustardseed, as they have had on other crops. Early indications point to slightly higher yellow mustard contract levels, about 16cents, at the high end of current cash levels.

SAFFLOWERSEED

World production of safflowerseed for 2000/01 is about 878,140 tonnes, down from an estimated 1.012 million tonnes in '99 (921,240-'98/99, 920,800 in '97/98). India produced nearly half the 2000 crop, about 430,000 tonnes per year. Pakistan produces about 1,200 tonnes a year. In recent years, the US has produced 180,000-195,000 tonnes, much of that in Montana. US safflowerseed production is about 180,000 tonnes in 2000 (183,600 in '99, 186,900 in' 98, 195,100 in'97). US planted area has declined to about 224,000 acres planted, 209,000 harvested (from 275,000 acres seeded in '99, 303,000-'98, 228,000-'97, 222,000-'96).

Canada produced an estimated 7,500 tonnes with production mainly in Saskatchewan, some in Alberta (compared to 3,800 tonnes in '99, 1,400 in '98). Manitoba had an estimated 4,400 tonnes in 2000 (900 in 1998). In dry years, Manitoba's southwest has produced most of the province's safflowerseed. Birdfeed appears to be the major use of much of the Canadian seed. A portion is exported to the US. In calendar year, 1998, Canada exported a total of about 866 tonnes of safflowerseed.

Safflower oil is considered a superior edible oilseed, although much of the crop is destined for birdseed for larger domestic or wild birds. Safflower is a deep-rooted, dryland crop, that tends to discolour or stain if rain is received at harvest, which does not necessarily affect its value for oil, but may cause discounting for birdseed markets that prefer a clean, white seed.

Price:

The import price of cleaned safflowerseed was about 20-23cents/pound in late-2000. Producer prices were 18-20cents, but weather-staining by late-rains reduces quality. Prices in 2000 are improved from November 1999's 10 cents/pound or $220/tonne (22 cents or $485 a '98/99, 25 cents or $550 in '97/98).

US safflowerseed is considered a "minor" oilseed and is eligible for a national loan rate of US$9.30/cwt and for a Loan Deficiency Payment when market prices fall below the loan. At the N.D. county level, the loan rate becomes US$6.82/cwt (the equivalent of C10cents/pound or C$221/tonne). US supports can be expected to have a price-limiting effect.

Outlook:

Weather will be a major determining factor in safflowerseed planting in Manitoba, since the crop prefers fairly dry conditions. The nearby Carrington, N.D., cold-press, co-op plant is capable of crushing "minor" oilseeds, including safflower and crambe, and others. The Dickinson, N.D. plant includes safflower in birdseed mixes. Birdfeed appears likely to continue as the major market for some time, which will drop prices back down closer to 10 cents as soon as supplies improve.

SUNFLOWERSEED

World sunseed supplies are somewhat smaller in 2000/01. Global production is estimated to be down 11% to about 23.6 million tonnes, a reversal of the increases in the previous few years (26.4 million tonnes in '99/00, 26.1 in '98/99). There are smaller crops in the US, Eastern Europe (3.25 million in '99, 3.41 in '98), in Argentina's upcoming crop, and in Turkey, but there are large crops in Russia, the Ukraine, and South Africa. Global sunseed carryover has been large since 99/00, but is now expected to drop about a third to approximately 2 million tonnes by August 2001.

Turkey had the smallest crop since 1982, at about 550-580,000 tonnes (800,000 in '99/00, 850,000 in '98/99). Turkey has imported sunseed from Russia and the Ukraine, but imports are expected to be limited by availability, according to "Oil World".

Argentina's current sunseed crop is put at 4 million tonnes (according to the USDA) or an even lower 3.4-3.7 million tonnes (according to "Oil World"). (The USDA classifies the crop as 2001/02). The crop harvested in spring of 2000 (2000/01) was 6.1 million, the '99 harvested crop was a record 7.1 million. The current Argentine crop is the smallest since '94/95 because of planting delays and shifts to soybeans. Argentina's sunflower planting is October-December, with soybean planting November-January, and harvesting in March. Argentina exported about 3.7 million tonnes of sunseed and product in Mar/Feb 2000/01 (550,000 tonnes of sunseed, 1.44 million tonnes of meal, 1.715 million tonnes of oil).

In Europe, another large crop was harvested in 2000 (3.688 million tonnes, compared to 3.21 million in '99, 3.40 in '98). Poor demand has had sunseed markets depressed, but the EU ban on meat and bone meal in livestock rations has benefited sunseed prices along with other high-protein sources. In 2000, wet weather hampered harvesting; in 1999, fall frosts and higher insect and sclerotic damage were a problem. Eastern Europe is exporting sunseed products in competition with the US, the EU and Argentina. Russia became a net export of sunflower oil in '99/00. The Ukraine has been encouraging oil exports with a 23% duty on sunseed export over the past year or so. Both Russia and the Ukraine are shipping sunoil to former Soviet Union countries, as well as N. Africa and Turkey. The EU is importing from Russia and the Ukraine, but

China and India also compete now in the European market. The Ukraine has a 3.4-3.6 million tonne crop (2.74 in '99/00, and2.4 in '98/00).

The US sunseed area was down 19% in 2000, and production is down about 17% to 1.63 million tonnes or 3.7 million pounds (compared to 1.97 million tonnes in '99, 2.39 in '98, 1.7 in '97and 1.7 in '96). Plantings are 78-79% oil types, 21-22% non-oils or confection types. Non-oil plantings dropped 36% to 506,000 acres in 2000. US carryover has been high in recent years, at around 1/4 million tonnes. With the smaller crop, US sunoil exports and crushing will be down again in '00/01. The Minn-Dak Growers Ltd. processes birdseed, using oil sunseed, safflower, and millet, at its Dickinson plant, and processes confectionery sunseed at Donaldson, Minn. and Drayton N.D. plants.

Western Canada produced about 119,300 tonnes of sunseed in 2000 (121,900 in '99, 111,800 in '98, 65,100 in '97). Manitoba generally produces about 70-75% of the total crop. An estimated 185,000 acres were planted in 2000 (170,000 harvested), with some losses due to the slow growing season and late frosts (140,000 and 125,000 in 1999). Saskatchewan planted only 25,000 acres of sunseed in 2000. Manitoba's crop totalled 101,811 tonnes (82,900 in '99, 86,200 in '98, 47,600 in '97, 37,700 in '96). The large crop provided Manitoba with a fair amount of good quality seed again this year, the amount suffering insect and frost damage (light weights) before harvest appears to be much less than the heavy losses in 1999. With no large-scale sunseed crushing in Canada in recent years, the potential for marketing Manitoba's oilseed sun to US crushers only exists as long as the US is not threatening to use the Export Enhancement Program for sunfloweroil ("SOAP"). The proportion of non-oils appears to have risen to around 80-85% of the total area. Much of the Canadian crop is destined for human consumption or confectionery, or for birdfeed. Close to 50,000 tonnes of sunflowerseed were exported from Canada in the calendar year, 2000 (41,920 tonnes in 1999), along with small amounts of oil.

Price:

Sunseed prices have shown some recent improvements, along with other protein sources, however, prices continue low. Some seasonal increase is expected as marketable supplies tighten. The major use for Manitoba sunseed is now non-oil, confection or birdfood, and non-oil prices are down along with oil because of adequate supplies of all grades.

US farmers have taken Loan Deficiency Payments on 60% of the '99 crop to early December, worth about US$68 million. US sunflowerseed is considered a "minor" oilseed and is eligible for a national loan rate of US$9.30/cwt and for a Loan Deficiency Payment when market prices fall below the loan. At the N.D. county level, the loan rate becomes US$8.71-9.50/cwt for oilsun (the equivalent of C12.8-14cents/pound or C$282-308/tonne). The N. Dakota loan rate for non-oil sunseed is US$8.74-9.52/cwt, although N.D. farmers generally get more from the confection or non-oil market (at a November 1999 average of US$13/cwt or about C19 cents/pound). In early January, 2001, the northern US crushers were paying US131-141/tonne or US5.95-6.40cent/pound for sunseed delivered to the plants (Enderlin and Fargo in N.D., and Red Wing, Mn). Sunoil was selling at the plants for US$0.143-0.148/pound, with 28% meal at US$115/tonne (Red Wing), and 35% protein at US$149-154/tonne (Enderlin).

The Manitoba price paid to producers for the oil-type, smaller, mainly black sunflowerseed in late November 2000 was around $192.90-198.40/tonne or 8.75-9 cents/pound (10 cents in '99, 14-15.5 cents in '98, 14-14.75 in '97), essentially for use in birdfeed. The Manitoba price for non-oil, confection-type, or striped sunseed was 14.5-17 cents in late-2000 (17 cents in '99,20-22.5 in '98, 17-18 cents in '97) for human consumption, and for birdfeed, 10-11 cents in 2000 (19-21

cents in '98, 14-17 in '97). Longer seed types of non-oil sunseed may sometimes be at a premium to the shorter, rounder types.

Outlook:

Some seasonal improvement is expected later in the 2000/01 crop year as supplies are brought down, along with a dip in March, when Argentina's crop hits the market. Sunflower prices continue under pressure globally from large soyoil supplies. With a record 2001 soybean crop expected in the US, that pressure will not ease. US oilsun production supports are likely to maintain US production and fairly low prices. Non-oil prices, and lower carryover inventories will continue to hold interest and acres to production in 2001 in both Canada and the US.

TRITICALE:

Canada's triticale production dropped back to 89,700 tonnes in 2000 (126,200 in '99, 85,300 in '98, 31,000 in '97). Although Manitoba now grows very little of the crop, production was up to an estimated 5,800 tonnes (3,000 tonnes in '99, 9,100 in '98), according to Statistics Canada's fall survey. About two-thirds of the crop is now grown in Alberta, the rest in Saskatchewan. About 45% of Canada's triticale plantings were not cut for grain in recent years. Although triticale is a rye/wheat cross, and was developed mainly for milling uses, many producers use it mainly as a cover crop on newly established forage fields, then hay or graze it.

Price:

There were few prices quoted in either 2000 or 1999. Triticale for feed would have to be ergot-free, and priced closer to rye than to wheat because of its low volume. In mid-November 2000, Manitoba triticale prices were quoted at $4/bushel. In 1998, prices were $157-175/tonne, $4/bushel or better, although few if any transactions were reported. In '97, triticale for seed, 85%+ germination, was also reported around $4/bushel to the Manitoba producer.

MAJOR DATA SOURCES:

Statistics Canada, Canadian Grain Commission, Agriculture Canada, FAO, Manitoba Agriculture and Food, United States Department of Agriculture, "Oil World"

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APPENDIX

ECONOMICS

The Conference Board of Canada and major Canadian banks are forecasting an improvement in the Canadian dollar for the year 2001, in the area of 1.45 to the US dollar. The US benchmark interest rate is expected to decline slightly, reducing inflationary concerns, and keeping real interest rates relatively high. The US dollar's value is also expected to decline slightly against the currencies of Japan, Australia and New Zealand, gaining some competitiveness and the hope of increased exports to those markets. Canada's economy is expected to continue to grow, although at a slower rate.

Despite a slowing in the US growth rate, the US government is still predicting the US economy will continue in the longest sustained growth period in US history. Growth is forecast to slow to 3% (4% in 1999) because of the strong US dollar, reduced investment and spending, and declines in equity markets. The global financial crisis had a negative effect on US agricultural and on other exports (reduced export revenues and a current account deficit of over US$300 billion) but, until fuel prices rose, had been credited with a positive effect on the overall US economy (reduced import and input costs).

Global agricultural trade is expected to continue to grow in 2001, with much of the gain to Asian countries, which are continuing to slowly recover from the financial crisis of 1997-99. The decline in the value of the Euro is expected to continue to hamper imports from the US, keep input costs and capital outflows to the US high. The Japanese Yen, although in decline by late-2000, is still considered high against the US dollar, and partly responsible for Japan's reduced trade and foreign trade earnings.

World GDP growth is projected at a slower pace of 3-3.5% in 2001 (4% in 2000, 2.5% in 1999). Overall economic growth in developed countries is estimated at 3%, with the EU also projected at 3% (2.7% in 2000, 2.4% in 1999). Higher costs, particularly for fuel, are expected to slow growth in developing countries to a 5.4% growth rate in 2001 (5.7% in 2000), and to around 5% in 2002.

In late 2000, the S. American Mercosur countries (Argentina, Brazil, Paraguay, Uruguay and associate members, Bolivia and Chile) committed to improving the regional economy. They agreed to limit annual inflation rates (to a maximum 5% between 2002 and 2005, 4% in 2006, 3% thereafter), to limit public debt and fiscal deficits. Economies in Latin America are expected to continue their recovery from the 1999 recessions. Latin American countries are expected to be one of the larger economic and agri-food import growth markets in the future. The surge in Mexico's consumer demand is expected to continue.

Russia's economy continues to falter following its 1998 currency crisis, and its leaders are attempting to improve and encourage the investment environment. Russia's President Putin held a number of meetings across Europe in recent months to encourage closer economic and investment links. In October 2000, there were discussions on European investments to upgrade the Russian energy sector (gas, oil, nuclear/electricity). By year's end, there appears to have been an agreement to swap Russian debt to Germany for Russian corporate equity, which should result in a more active European role in redeveloping Russia's industries.

Much of the global financial crisis of recent years has been attributed to the destabilizing outflow of capital from Asia. Capital is expected to continue to flow back into the "Asian Tigers", following the outflows of about $50 billion in 1997 and 1998 (and the plus $250 billion inflow in 1996). Japan's growth was slower than expected in 1999 and 2000 and is expected to reach only

2% in 2001. Good growth should continue in China, S. Korea, and Taiwan, although slowing in East Asia and the Middle East.

WORLD POPULATION AND CONSUMPTION

The world's population is growing at an estimated rate of about 77 million per year. On October 12th, 1999, the UN put the world's population at 6 billion, up from around 1.5 billion at the turn of the century. About 14 1/2 months later, at the start of 2000, the population estimate was over 6.097 billion. At that rate, the world could reach 7 billion by late 2010.

The population of the world will age much faster in the next half-century than previously, as a result of a fertility decline and an increase in life expectancy. In 1950, the average (or "median") age was 23.5 years, in 1998, it was 26.1 years and, by 2050, it is projected to reach 37.8 years. For developed countries, the average age for 2050 is projected at 45.6 years. By 2050, children are expected to comprise 20% of the world's population, and people over 60, 22%. In developed countries, the proportion of children was 18% in 1998 (slightly surpassed by over-60's), and is expected to decline to about 14% by 2050. In Africa, 43% of the population are children, with an expected decline to only 24% by 2050.

An estimated one-third of the world's population lacks access to adequate food levels. In sub-Saharan Africa alone, severe food shortages persist in 15 countries in sub-Saharan Africa, affecting mainly 28 million people by the end of 2000 (19 million in 1999) due to drought, civil conflict, and reductions in the farming community by disease (particularly HIV/AIDS). At least 20 million in this area will require food aid well into 2001, according to the FAO. About one-sixth the world's population, about one billion people, will be below the minimum recommended nutritional requirements, according to the USDA's food security assessment, and the food shortfall from recommended consumption could be 17-23 million tonnes in 2009.

The nutrition gap in Latin American and Caribbean countries is expected to grow over the next decade, mainly because of population growth and increasing income disparity; import dependency is expected to increase to 47%, with nearly one-third of the population unable to meet nutritional requirements. Food imports and aid will be crucial over the long term.

WORLD TRADE AGREEMENTS

Discussions have been undertaken over the past year or two with the aim of harmonizing international policies on genetically or living modified organisms (GMO or LMO), and on drug and chemical registrations. The United Nations' Persistent Organic Pollutants Protocol (POP) would see a number of commonly used chemicals phased out and/or replaced by 2002.

The World Trade Organization's meetings began in March 2000. Major negotiations may resume during 2001, after the new US administration is in place, or 2002, after the scheduled WTO administration's reorganization. Previous trade talks have taken between 5 to 10 years to complete.

Upcoming topics for formal discussion will likely include issues not fully addressed during the Uruguay Round, including reductions in export subsidies and domestic support programs, improved market access, administration of tariff rate quotas (TRQ's), the use of safeguards for specific commodities, trade in GMO, LMO, or biotech crops, and phyto-sanitary or non-tariff trade barriers. The USDA estimates that trade barriers, domestic and export subsidies have reduced world prices about 12%, with the EU accounting for 38%, the US 15%, Japan and Korea 13%, and Canada 2% of the price-distortion. The EU alone has accounted for more than 90% of global export subsidy expenditures. The EU and the US account for most of the global distortions related

to domestic producer support, while most other countries rely mainly on tariffs to support their farm sectors and raise government revenue, but negatively affect consumers and producers.

The EU has announced its intention of retaining "blue box" subsidies (direct income supports, such as area aid and "headage"), but may be willing to reduce export subsidies if US export credits are treated the same way. The EU and Japan also want to build in compensation to farmers for the higher costs of producing safer food, protecting the environment, guarding animal welfare, preserving the countryside and enhancing rural life.

Current WTO rules will continue to apply in the absence of a new agreement, subsidy cuts and tariff reductions will end shortly as scheduled, and will remain static at ending levels, but improvements will have to wait. New, disguised subsidies are not allowed. During 1995-2000, members were to reduce tariffs by 36% (24% for developing countries), convert non-tariff barriers to tariffs or tariff-rate quotas, reduce domestic producer support by 20% (13%), and gradually reduce the value and volume of subsidized exports. Developing countries have until the start of 2005 to cut spending by 24% and quantities by 14%. Export credit and food aid programs were exempt from budget and quantity limits under the current agreement, but were not to undermine WTO commitments. Export taxes, which are considered a supply management tool, and differential export taxes which generally favour the export of processed product are also likely to be targeted for discussion.

The Kyoto Protocol is to be ratified by member countries, including the US, by 2002. Countries have been trading in Carbon Emission Reduction Credits (CERC) over the past few years in preparation.

The US has been considering easing the 40-year-old US embargo on sales of agricultural products to Cuba. Although the US now allows sales to non-governmental entities, commercial and/or humanitarian organizations are currently inadequate to handle such imports. Cuba imports about 950,000 tonnes of wheat and flour. Bread is rationed and consumption has declined to 35 kg/person, from 50 kg/person in the 1980's, according to the USDA.

CHINA

Jiang Zemin, 74, is expected to step down as China's President in 2003 (China's constitution provides for 2 five-year terms) and as general secretary of the Chinese Communist Party in 2002. In the interim, analysts for the "Far East Economic Review" expect Zemin's ideological campaign, the "Three Represents" (representing the interests of "advanced forces of production", "advanced culture", and of the "broad masses") to be incorporated into the party charter in 2002. Jiang's predecessor, Deng Xiaoping, is credited with introducing market economy elements into China's style of socialism.

Among Zemin's achievements are international trade agreements. After negotiating bilateral trade agreements with major WTO members, China is expected to be admitted to membership early in 2001. Another trade agreement in early stages of discussion is an Australia-China trade treaty.

China is encouraging additional grain production through recent farm program reforms, and could become more of a major international competitor in the near future. In '95/96, China was the world's largest wheat importer. Since then, China has shifted toward increased self-sufficiency in basic foodstuffs. Grain output has risen more sharply than domestic consumption, despite a population that grows by 15mln people/year. China is now importing only small amounts of wheat and has become a net exporter of corn and rice. Corn exports may be trimmed as the feed

manufacturing sector and livestock feeding increases, although at present, large corn exports are expected. The USDA is anticipating China's imports of non-grain feed ingredients (high protein soybeans, soymeal and feed additives), soyoil, and other vegetable oils, to continue strong into the long-term.

China has reached separate agreements with its main trading partners and may join the World Trade Organization in early 2001, in time to participate in the upcoming round of negotiations. Bi-lateral agreements were announced November 26, 1999, with Canada, and November 15, 1999, with the US. The Canada/China deal apparently matches one signed by China and the U.S. Other trading partners reached similar agreements, and the US Congress approved permanent "Normal Trade Relations", giving China the same reduced-tariff rates as other nations. Implementation of the agreements are apparently on hold until China is officially welcomed into the WTO.

The trade agreements are expected to improve Canadian access for canola, canola oil, wheat, barley, malt, feed peas, alfalfa pellets, ginseng and whiskey. China agreed to tariff rate quotas or TRQ (with a low tariff up to a certain level of imports, and a higher tariff above that). The canola oil TRQ would start at 600,000 tonnes, rising to 1.13 million tonnes in 5 years, with the TRQ eliminated after 6 years. The canola oil TRQ will be the same as soyoil; but there will be no TRQ for canola seed, which will still favour seed imports. The wheat TRQ is 7.3 million tonnes, rising to 9.3 million in 4 years. China would reportedly cut its tariffs on US imports from an average of 22% to 17%, with tariffs on major US farm products cut to15% or less; large but increasing tariff-rate quotas (tariff-free imports) would be set up for wheat, corn, rice and cotton, China's export subsidies and state soyoil trading would be phased out, with the private sector allowed increased market share. The US would get access to China's telecommunications, financial, and audiovisual markets, and US quotas on China's textiles.

China is targeting 2009 as the completion date for the Three Gorges Dam. It will cost approximately US$27 billion, is to generate as much electricity as 18 nuclear power plants, create a reservoir longer than Lake Superior, and provide a source transportable drinking and irrigation water.

THE EUROPE UNION

The European Union (EU) started with 6 member states, is now at 15, and potentially will reach 27 members within a few years. Some agreement on reforming the EU's institutions and altering the voting numbers or representation of individual states was reached at the summit of Nice, which ended December 11, 2000. Some of the reforms are to be implemented by the end of 2002. Reform of EU commission representation was deferred until they reach 27 member countries; currently France, Germany, Italy, the UK and Spain each have 2 commissioners. Membership is expected to be extended mainly eastward, to Poland, the Czech Republic, Hungary, Slovenia, Estonia and also to Cyprus by 2003. Invitations are expected for 6 more countries to start talks on joining the Union (Slovakia, Latvia, Lithuania, Bulgaria, Romania and Malta). Turkey is also a potential future member.

The potential cost of adding new members to the EU agricultural program has been declining as the declining value of the Euro narrows the price gap between EU and Central European commodity prices for wheat, feedgrains, beef, and pork. Poland's wheat prices have been higher than the EU intervention price (market floor). Compared to Hungary's wheat price, the EU wheat intervention dropped from a 70% premium in April 1999 to a 29% premium by April 2000. By 2005-6, the gaps may be negligible. The current program, Agenda 2000, with the same

intervention price for wheat, barley, and corn will encourage eastern feedgrain production, feedgrain prices in eastern Europe are well below wheat. As a result, the ratio of feed grain prices to wheat prices will shift in favor of feed grains. (Between January 1999 and November 2000, the Euro dropped from US$1.16 to US$0.85.)

The European Commission's Common Agricultural Policy reform proposals, "Agenda 2000", were agreed to in the spring of 1999, and implementation began in 2000. The EU has 7.5 million farms, with an average size of forty acres, and is therefore intending to use farm programs more in rural development and less in agricultural production. As in its WTO negotiations, the EU proposes to make agriculture a special case through a concept of "multifunctionality", which would include farming's role in preserving the countryside, enhancing rural life, protecting the environment, and guarding animal welfare. Market supports will be reduced and farm income will be supported with direct payments. Cereal price support will be reduced by more than 50% through both of these reforms. Direct payments to farmers, decoupled from production, already account for most of the expenditure under the CAP (more than 70 percent of what was traditionally considered market support). Member states can also modify the payments and link them to environmental considerations.

EU reforms are intended to curb stocks and expenditure increases, particularly with an expanded and increasingly productive production area. According to the EC's own projections, reforms that are put in place for 2000 may be insufficient to prevent EU intervention and ending stocks from doubling between the end of 1997 (from 36.8 million tonnes) and the end of 2005.

EU forecasts contained in Agenda 2000 proposals (done in 1998) assumed that consumption would rise faster than production, that EU wheat production will grow by less than 10 million tonnes, with about a 5 million tonne drop in coarse grain production and little change in rapeseed or sunseed, and that world trade will grow by 40-60 million tonnes. The EC also assumed that the world price of wheat will increase to between US$166-187/tonne by 2005, although subsequent, less optimistic outlooks would put the 2005 price closer to US$140, compared to US$100/tonne in late 1998. Export rebates amount to the difference between the higher domestic price and the world or export price. The proposed Agenda 2000 intervention price is therefore designed to be below the world price (at 95.35 ECU/tonne or US$115/tonne at a 1.2 exchange rate), so that the EU could cease the use of export rebates or subsidies.

The "Blair House Agreement" between the EU and the US was a US attempt to prevent specific crop incentives; however, since then, low wheat and high rapeseed prices favoured oilseed production. Additionally, the EU retained an exception to plant rapeseed for ethanol on the set-aside allowance, and has an "area aid" for flaxseed that is about C$500/ha more than for rapeseed. The 1998 (and 1997) compensatory payment to European farmers for wheat was about C$217/acre or C$543/ha (304.3ECU/ha), while the payment for rapeseed was about C$360/acre or C$900/ha (503.75ECU/ha or 566 less adjustment penalty), with a set-aside compensation of about C$290/acre (405.5 ECU/ha). Agenda 2000 would currently increase the wheat payment to 369.6 ECU/ha, and decrease the rapeseed payment to 203.28 ECU/ha (a scenario considered disastrous to EU rapeseed if prices drop).

In March 1999, EU members agreed to more graduated farm program reforms than earlier proposed. The intervention price for cereals was to be reduced 20% in two steps (10% in 2000, and a further 10% in 2001) to bring it to 95.35ECU/tonne (1999 at 119.19ECU/tonne). As proposed in July 1997, the EU will phase in a single per-hectare aid payment for all cereals and oilseeds, which amounted to an increase of about 20% for wheat and a decrease of about 37% for oilseeds. Direct aid for cereals will be increased to 66ECU/tonne (54ECU at present). Direct

payments per hectare for oilseeds will be reduced in three annual steps to 66 ECU/tonne by 2002.

The March agreement set the compulsory set-aside at 10% for 2000/01 and 2001/02; since then, the set-aside has been set at 10% through to 2006 (subject to revision). (Many in the EU had acknowledged that even a 25% set-aside could create large intervention stocks.) Set-aside compensation was set at 66ECU/tonne. The set-aside payment will also fall in Euro terms to be the same rate as for cereals. In 2000, the area payments for set-aside fell to 58.67 Euro /tonne (previous 68.83 Euro/tonne), converted to an area payment at the relevant historic regional reference yield (5.89 t/ha for England). From 2001 the payment rate will be 63 Euro/tonne. At the Euro/sterling exchange rate applicable to area payments in 1999, this would give payment rates of £224.64/hectare in 2000 and £241.22 from 2001. From 2000 onwards the payment period will be 16 November to 31 January.

The declining value of the European currency, the Euro, and tight supplies of high-quality, new-crop grain in the EU has resulted in a sharp reduction in the use of export subsidies in early 2000/01. Wheat and barley subsidies have been virtually non-existent (3 Euro/tonne on wheat in early December 2000), although sizeable subsidies were still being paid on export oats (32.95 Euros/tonne, December 2000). In 1999, WTO provisions allowed the EU to increase its use of export subsidies (a carryover in unused subsidy allowances from the previous year, plus the annual, allowable subsidies). However, in 2000, the final year of the WTO cuts, no carryover or roll-over of credit is allowed, and a tight accounting of subsidy levels is required. In 1999, subsidies had increased as world competitive prices dropped well below domestic EU levels, EU supplies increased, and demand from North Africa (especially Egypt) increased. (In the fall of 1999, subsidies of up to US$65/tonne were reported on cereals, including rye; the previous fall, export subsidies for wheat were reported around 31ECU/tonne or C$55/tonne, Barley 67.46ECU/tonne or C$119/tonne, Malt 77.27ECU/tonne or C$137/tonne.) Grain prices have risen in 2000, but much of the lower-quality EU grain is ineligible for EU programs.

A number of countries in the EU have imposed or are considering additional taxes on farm inputs to reduce their use, in addition to taxes on fuel. Sweden and Denmark have taxed pesticides for several years. Denmark increased the pesticide tax to 72% in 1998, and was taxing nitrogen use at US$0.45 per pound in late-1999, early-2000. Denmark also limits and checks individual farm use, and imposes fines for excess application. Jan 1, 2000, France also imposed a tax on pesticide use, estimated at US$66 million in 2000 alone. In France, spray ingredients are taxed, based on 7 classes, from a zero tax on class 1 copper or sulphur-based fungicides, about US$0.10 per acre on class 3, to about $1.12 per pound of active ingredient on more powerful, class 7 herbicides. On Jan 1, 2001, France was to impose a tax on fertilizer use. The taxes are collected at the point of sale, and generally shared by sellers, importers, farmers, etc.

Since 1996, CAP expenditure has remained largely unchanged at about 37billion ECU (US$39 billion), plus about 2 billion ECU (US$2.1 billion) on "accompanying measures", and plans are to keep it close to that level until about 2006.

Europe's BSE (bovine spongiform encephalopathy) outbreak spread to mainland Europe in late 2000. European governments are working to prevent a livestock market collapse. Previous regulations forbade feeding ruminant remains to ruminants, and allowed it to be fed only to poultry and hogs. The suspicion is that meal from infected cattle were used in some cattle rations, possibly in a mix with fishmeal. A ban on the use of rendered bone and meat meal from any and all cattle in any livestock feed is to come into effect in July, 2001, for a 6-month period. A number of countries took other feed use precautions earlier and may be excluded. The EU has also decided to test or to destroy all cattle older than 30 months by July 1. Britain's experience

suggests that once safeguards are in place and consumer confidence restored, beef consumption will recover.

THE U.S.

The "Federal Agriculture Improvement and Reform Act of 1996" ("FAIR") became law in April/96, and is in effect for 7 years, through 2002. (A review of the 1996 US Farm Bill began in early 2000.) It was meant to redesign US farm income support and supply management programs for US wheat, corn, grain sorghum, barley, oats, rice, and upland cotton, and dairy. It was meant to expand the market-oriented policies of the previous two major farm acts, and to be a gradual reduction of US government influence in the agricultural sector. It was not expected to affect production. Government payments were expected to be higher, but fixed, during the transition, which would increase net farm income, but allow it to become "more variable from year to year in response to supply and demand shocks".

The major US program vehicles now include: risk management programs, including crop insurance (disaster payments as indemnities and a 1999 and 2000 buy-down of crop insurance premiums), transition payments, government loans (and storage payments), Loan Deficiency payments, and Conservation acreage contract payments.

Non-crop specific (decoupled), WTO-legal, per-acre transition payments or "production flexibility payments" to US producers under "Freedom to Farm" were to stabilize income and assist the move to a market-based system with a staged phase-out. The emergency "market loss" component of emergency aid is generally paid as a proportion of the production flexibility payments. For wheat, the transition payments were calculated at US87¢/bu for 1996, dropping to 63¢ in '97, 65¢-'98, 63¢-'99, 57¢-2000, 46¢-2001, 45¢-2002¢. Per-acre payments were then based on 85% of the historical base acres and yields for each crop.

The Loan Deficiency Payments (LDP) are estimated at US$7.9 billion for 2000 ($6.9 billion-1999, $1.8 -1998). LDPs pay US farmers the difference between local (posted) market prices and Commodity Credit Corporation loan rates. When the market price falls below the loan rate, increased government payments offset the decline in cash receipts. Alternatively, they can take a Loan Deficiency Payment which essentially pays out the difference between the USDA's calculated or posted market price and the loan rate, allowing farmers to bottom-pick or select a seasonally low market price and get the largest payment they can (without losing ownership), then sell at a later date or into a different market, hopefully at a higher price.